

FARMSTEAD MAGAZINE

Home Gardening & Small Farming

The Holiday Table
—page 26—

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amily recipes



Fireplaces Old & New

Fancy Poultry

Chickens for Children

White-tailed Deer

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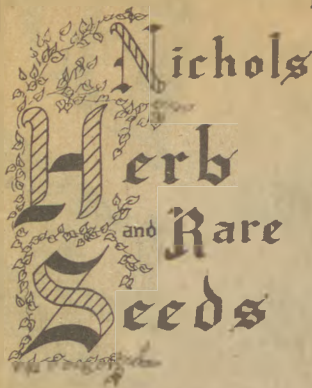
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HOME GARDENER'S CATALOG



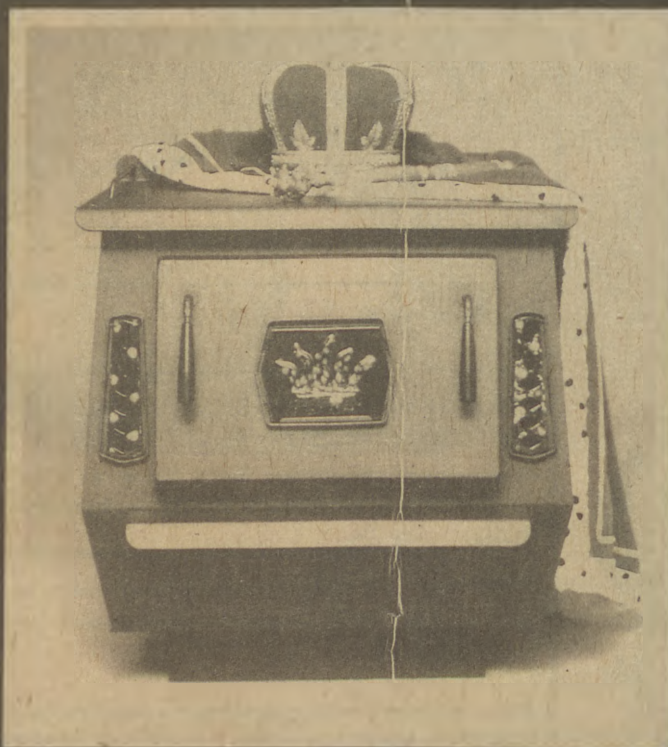
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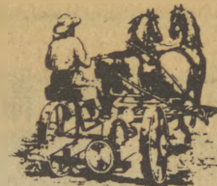
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FARMSTEAD MAGAZINE

Home Gardening & Small Farming

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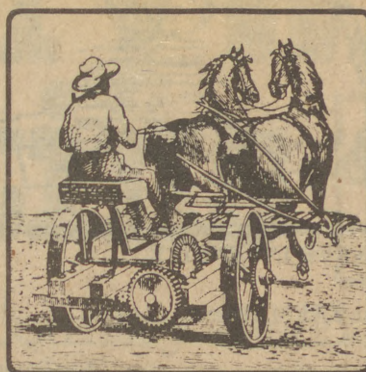


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COVER PHOTO: **Bringing Home The Tree**, by Ozzie Sweet. Mr. Sweet, who lives in Francetown, New Hampshire, has had many of his photographs published on the covers of other national magazines.

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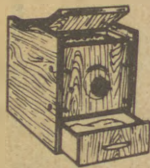
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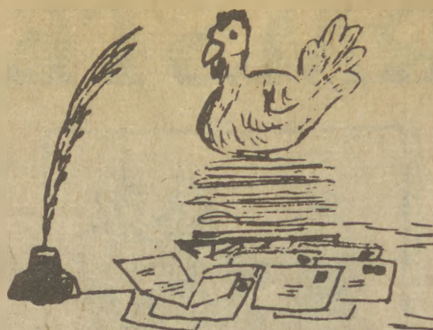
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Letters



YANKEE INGENUITY

Dear FARMSTEAD,

I thought you might think it interesting that "yankee ingenuity" on a small scale has not decreased. Living on an island, with no electricity for incubators created a problem for me when a broody hen abandoned her eggs. My cookstove temperature fluctuated at night and hot water bottles grew too cold toward morning. The only source of constant heat was the top vent of our gas refrigerator. In a wire basket they reposed quite comfortably being turned daily and sprinkled with warm water toward the end of their confinement. Only one of three fertile eggs hatched, but it proved a point. Next time I'll use more eggs and make sure the rooster has been keeping up with his duties. In closing, readers might be able to use this tip: Those bleach bottle scoops that lobstermen use for bailing boats make excellent grain scoops. They come in different sizes too. Thanks for a great magazine.

Gail Tobey

Route 2

Brunswick, Maine

(on Little Yarmouth Island)

MAKING BUTTER

Dear FARMSTEAD,

In your Harvest 1981, Number 41 issue, I saw the question about butter getting rancid. After years of the same problem I now have the answer, so am forwarding it on to you for others who might be having the same difficulty.

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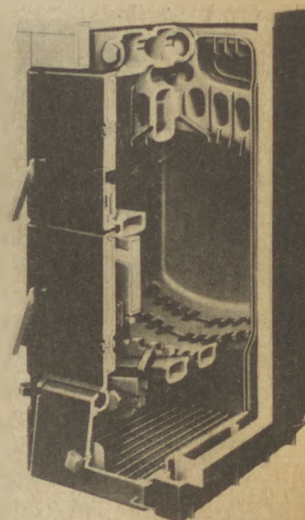
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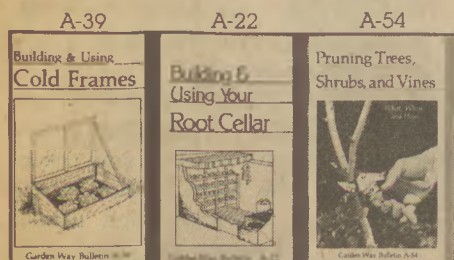
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your butter. After making your butter, wash thoroughly, shape and put in freezer, where it will keep indefinitely without getting sour or rancid.

You can also make shortening from older butter or excess butter. Put the butter in a pan on low heat, and heat until 170 degrees F.. Take off fire and let all the residue settle to the bottom. Pour butter into a container.

Trust this will help someone else, as I know rancid butter is not appetizing.

Mrs. Roy Reed
Powell Butte, Oregon

RABBIT AND DUCK BOLOGNA

Dear FARMSTEAD,

I want to let you know how much we appreciate and use your sausage recipes in your Fall issue (magazine 34). We use the bologna recipe but we substitute rabbit and duck meat for the pork and beef. We bone the duck and rabbit, put the meat through a grinder and add all the spices plus onions and garlic. (The meat includes all the livers and gizzards.) Then we use my electric cookie maker and stuff hog casings. It works great! We tie the ends and proceed according to your recipe.

After refrigerating overnight, we smoke the sausage the next day over a very low fire in a regular smoker. It is absolutely delicious. You can fry it or just heat it in boiling water or eat it cold.

We raise our own rabbits and ducks, so there is no expense involved. It is a wonderful, different way to use our rabbit and duck meat. Sometimes instead of putting it in casings, we just put it in freezer containers after grinding and use it for patty sausage.

We keep all our old Farmsteads and go back and browse through them. Hope we've helped someone.

Anita and Dale Foster
Denham Springs, Louisiana

PROUD OF LIFESTYLE

Dear FARMSTEAD,

This is our first year with Farmstead and we enjoy every issue from cover to cover.

We have been gardening for five years and have home canned and

frozen many a container of fruits and vegetables.

We also do all of our own butchering. Your magazine has had many useful articles on both.

We also have a compost bin that is quite unique. A friend of ours had a 250 gallon oil tank which had one entire side cut out. My husband drilled many holes in the opposite side for drainage. It works extremely well, and didn't cost us a thing.

This is our second year in milk goats. (This year our doe gave birth to triplets.) I have made cottage cheese, cream cheese and butter from the surplus milk. Our two children are crazy about the milk.

Is it possible that your readers have any information on changing a cow cream separator over to a goat cream separator? We have a hand crank International Harvester and cannot find any information on changing it over.

We are very proud of our lifestyle and feel very good when we go to the grocery store and only spend between \$10.00 and \$15.00. It's a lot of work, but work that we really enjoy.

Thank you for a great magazine and keep up the good work.

Darla and Terry Mehrmann
R.#1

Freeburg, Il. 62243

WRONG SIDE?

Dear FARMSTEAD,

I have just discovered your magazine and enjoy it immensely; even the story about the joint ownership of a cow, although your illustration appears to be backwards. In both scenes of the cow being milked, the artist shows the milker on the wrong side of the cow.

I was raised on a farm and the cows were always milked from the cows' right side. Approaching and trying to milk from the left would have caused quite a bovine scene.

Thanks again for your excellent magazine.

Dolores Von DenHoeb
Stickney, South Dakota

Correction

The cover photo for the Harvest 1981 issue was taken by photographer Norman Beecher, not Jacqueline Manning.

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If You Don't Agree It Beats Bud, Schlitz Or Miller, I'll Send You \$5.00 FREE... Plus A Full Refund..."

Hello. My name is Bud Weckesser, President of Bierhaus International.

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In fact, since the consolidation of the major American breweries, a beer drinker's revolution is starting in America. Quietly. But it's spreading fast. Our company alone has sold over 30,000 mini-breweries during the past 24 months. And over 180 dealers coast to coast have joined us to supply ingredients to their communities. It's happening very rapidly.

Give me five minutes of your time and I'll show you how to slash up to \$650.00 off your beer bill during the next 12 months.

Let me separate some myths from fact:

MYTH — "I remember my Dad used to make 'home brew' years ago. It was flat and cloudy."

FACT — Old fashioned 'home brew' is lousy. No argument. But we're not talking about old fashioned home brew. Our mini-brewery is TOTALLY different. It contains a professional brewer's fermentation tank... the finest hops in the world, imported from Bavaria... 100% PURE barley malt... and a superb lager yeast imported from England.

That's why I'm offering my crass \$5.00 FREE guarantee. I'm frustrated. I really am. Because I wish there was a way you could ACTUALLY SAMPLE this new beer. It's crystal clear with a thick creamy head. It has a zesty European flavor comparable to Carlsberg, Becks, Heineken, Dortmunder, Spatenbrau and other great European lagers. I ABSOLUTELY guarantee it.

MYTH — "Yes, but it takes too long... and it's complicated."

FACT — Using the Bierhaus mini-brewery, you can brew beer in just 27 minutes on a regular kitchen stove. If you want to make 6-8 cases of 12 oz. bottles, it may take 45 minutes. Let it remain in

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MYTH — "But, large commercial breweries with all their expertise surely produce the best beer in the world."

FACT — That's like saying because a cellophane wrapped pie in the supermarket is baked by a national bakery it's got to be better than a homemade apple pie fresh from the oven.

If you use our mini-brewery and follow the instructions carefully, your beer will be better than commercial beer. Because, by law, commercial breweries are allowed to use up to 52 different artificial ingredients... including tannin and enzymes, calcium disodium ethylenediaminetetraacetate (to prevent gushing), propylene glycol alginate (to stabilize the foam), and three coal tar dyes for artificial coloring.

Our new mini-brewery — unlike commercial breweries — uses NO ARTIFICIAL INGREDIENTS OF ANY KIND. Absolutely none. As a result, the beer has a fantastic pure taste not found in commercial beers. You have to TRY IT TO BELIEVE IT.

MYTH — "Beer made at home is so powerful it'll knock your socks off."

FACT — No way. You can now brew our Bierhaus Amber Lager with only 90 calories per bottle. And it doesn't taste like water, either. Even better, it contains just half the carbohydrates of many commercial beers. Best of all, it doesn't knock you on your tail after one or two bottles. Rest assured, our mini-brewery is capable of producing a great dark lager that's intended only for sipping — if you know what I mean. But you're the Brewmaster. You control the alcoholic content of the beer when you brew it.

We stock a wide range of ingredients. You can make any kind of beer you wish... including British ale and stout.

MYTH — "Making beer at home is illegal..."

FACT — House Resolution 1337, passed by Congress and signed by President Carter in February, 1979, allows households of two people 18 years or older to make 200 gallons of beer per year — tax free. Moreover, you don't need a Federal license of any kind.

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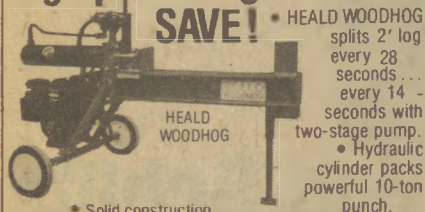
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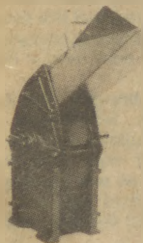
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ASK FARMSTEAD



I have a disgustingly severe mite problem in my chicken house. Is there any reasonably effective organic method of killing or at least discouraging these vermin? The only methods published by conventional poultry experts involve using chemical poisons of dubious safety.

We contacted Jim Farrington at the extension service about mites. Here's his reply: Mites cause great discomfort to the birds since they feed by sucking blood. This results in blood loss, feather pulling, and reduced weight gain and egg production. In addition, mites often move onto humans who are working around infested chickens. Anyone who has experienced this will attest to the discomfort it causes.

Unfortunately, I don't believe there is any way to effectively eradicate poultry mites without the use of chemicals. However, once the population is eliminated by judicious use of chemicals, good sanitation and management practices can usually prevent a reinfestation.

When using chemicals cleared for use on chickens and chicken houses such as carthoryl (Sevin) dust and malathion dust or wettable powder, be sure to follow all label directions and precautions.

After this initial chemical control, the following procedure should prevent reinfestation.

1. Thoroughly clean and sanitize the building and equipment.
2. Remove all trash and unnecessary items from the building.
3. Carefully examine any new birds brought in to prevent reinfestation.
4. Stay away from other poultry and don't allow other poultry owners in your chicken house.

5. Screen all windows to prevent the entrance of wild birds into the chicken house. Wild birds are believed to be a major source of mite infestation in chickens.

While I don't believe there is a practical way to eliminate a severe mite problem without chemicals, I do feel that once the infestation is eliminated, one can maintain a mite free poultry house without resorting to chemicals.

My horse insists on chewing wood. He's destroyed his fence in several places. What causes this habit and how can I stop it?

There are several causes of wood chewing. The most common is the lack of roughage, such as hay or pasture, in the animals' diet. This problem is commonly seen among horses that are fed complete pelleted rations. Because these horses have no hay or pasture, their natural instinct to chew is not fulfilled. As a result, they often satisfy this desire to chew at the expense of board fences and barns, says Dr. Clinton Depew, animal scientist.

In an effort to keep horses from wood chewing, the average horse should be fed approximately ten pounds of hay per day to satisfy this desire to chew and meet the fiber requirements of its digestive tract.

Another related problem which causes wood chewing is boredom. Depew says that stalled horses, with a limited opportunity to exercise, tend to become bored and wood chewing results. Small stalls and confined areas intensify the problem but daily exercise will help to minimize it.

In addition to lack of roughage and boredom, wood chewing can also be a developmental habit, learned from other horses. Horsepeople have reported that one wood chewing horse has resulted in all horses in a barn chewing wood. Therefore, to avoid the problem of a horse developing this habit, horses which chew wood should be separated from other horses as much as possible.

Depew says that occasionally a horse will chew wood as a result of

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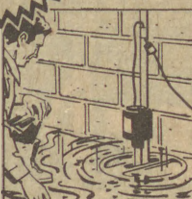
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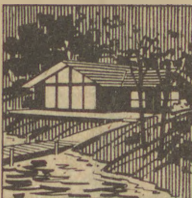
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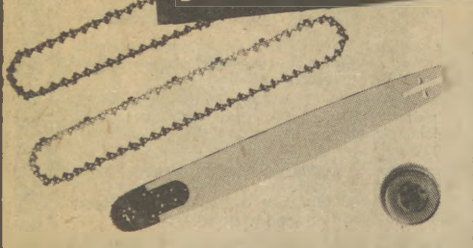
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vitamin or mineral deficiencies. However, this is a rare occurrence and should not normally be considered the cause of wood chewing unless the horse is in extremely poor condition.

Wood chewing can be a devastating problem leading to dirt, bark or even mane and tail eating. But by supplying adequate roughage and daily exercise, most of the problems can be avoided.

--LSU Cooperative Extension Service

I want to start raising a few chickens for home egg use. My problem is that with all the varieties available, I don't know what kind to get.

In most cases, the smaller the hen, the more efficient her production. With this type of bird, your feed cost per dozen eggs will be considerably lower than that of the heavy meat type strains.

Consider White Leghorns or one of the inbred crosses if you want efficient egg producers. They'll normally require four to five pounds of feed per dozen eggs. Although most of these strains produce white shell eggs, some lay brown ones. Shell color has no influence on the nutritional value of an egg.

Your best bet in getting started in your own egg business is to buy sexed, day-old pullet chicks rather than straight-run (pullet and cockerel) chicks. In some areas it is possible to buy started pullets 18 to 20 weeks old. This eliminates the need for special equipment and housing for starting chicks.

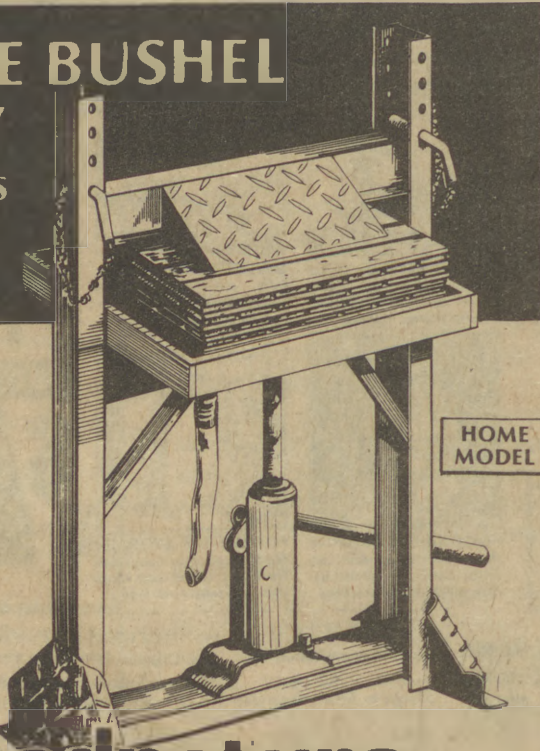
Most good broiler stock comes from crosses of White Cornish males with White Plymouth Rock type females. Some breeds such as the New Hampshires, White Rocks, and Barred Plymouth Rocks, have lines which have been bred specifically for meat production. Though the females will produce some eggs, they're not nearly as efficient as the lightweight birds mentioned earlier.

The normal New Hampshire, Barred Rock, White Rock and Rhode Island Red lines are considered dual-purpose breeds. They require more feed to produce a dozen eggs. But the hens are larger for eating purposes and the cockerels make better fryers or roasters than the egg-type birds. These dual-purpose hens lay brown eggs. Regardless of what kind you pick, always buy healthy birds from reputable hatcheries or dealers.

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We have a flock of about 60 chickens. They have started to eat feathers off the ground and off each other. They are not in moult. We have sprayed the house and pen with a louse and mite killer and let them free range until they ate our garden up and we locked them back up.

Is there anything we can give them to stop them from eating their feathers? We have changed their feed but it doesn't seem to make a difference. We are now feeding them crushed corn, laying mash and kernel corn.

We asked our poultry expert Jan Willems to help with this permanently recurring question from poultry-people.

Once animals acquire a bad habit, it is very hard to cure it. Prevention is the best remedy in feather eating. That is why most commercial chicken farmers have their chicks debeaked, give them enough space (at least 1 square foot per bird, when they are growing up, and more when adults), don't give too much light in their quarters, and give them something to scratch and move around to prevent boredom. I don't think lice or mites are your problem. It could be that your mixture of feed in corn and mash is a bit low in protein content. It doesn't seem to be pure cannibalism as they also pick feathers off the ground. Your experiment with free range and the destruction of your garden was to be expected. You either fence your garden in to keep the birds out, or fence the chickens in to keep them out of that area. Now that the garden season is mostly over, you could try free range again. You might try debeaking. Ask you area's extension service for an expert who can do it for you. Doing it yourself with older hens can be damaging to some birds, and you might also not like to do it. Some folksy remedies like providing raw meat in the pen or vinegar in the water, etc. do rarely work.

I am sorry I cannot give you a sure-fire remedy. If nothing works, start with a new flock next spring, or clean out and get some ready to lay pullets or laying hens. (I assume your flock are laying hens, otherwise the frying pan will be the automatic solution to your problem). It might be possible that only a couple of the birds are the feather eaters (mark a bird with a colored ring whenever you observe one pecking or eating feathers) and then you simply cull these.

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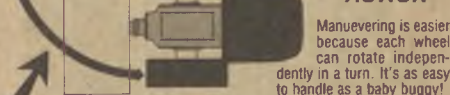
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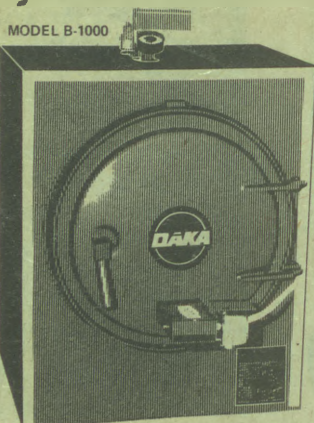
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In your Summer 1981 issue, you hit upon something near and dear to my heart. I have searched the Eastern half of the U.S. looking for "Mulefoot" hogs. I've contacted the Agricultural Departments of almost all states east of the Mississippi River and last report of this breed was ten years ago.

Tell me more about Choctaw hogs.

We sent this question to Kelly Klover, our pig expert, and received the following answer:

You needed to move your search for Mulefoot hogs just a little further West as we were able to find addresses for three Mulefoot breeders along the Western bank of the Mississippi. The Mulefoot, with a mule type rather than a cloven hoof, was held to be resistant to the dreaded hog cholera, a disease that has fortunately been eliminated in the U.S.. MU extension personnel supplied the names and addresses for the following Mulefoot breeders: R.M. Holliday, Rt. 2, Louisiana, MO, 314-754-4681; Gordon Arthaud, Rt. 2, Hannibal, MO, 314-221-6213; and Paul Rosenkrans, RFD, New London, MO.

The Choctaw hog, a near feral breed, I know of largely through university reports from the South and understand it to be a rather small breed with lots of red and black spotting. I would suggest you contact extension personnel at universities in Tennessee, Arkansas, Louisiana and Florida as all have done some work with feral swine strains.

Your interest in these two, truly vanishing breeds leads me to believe others might be interested in some of the lesser known breeds of swine as well. The poultry people are painfully aware of the disappearance or nearly so of specific breeds and any time there is a loss in the gene pool the industry has to suffer; so, it is to be hoped there will be renewed interest in some of the waning breeds. Four others that come quickly to mind are the Hereford, Tamsworth, Wessex and Ohio Improved Chester.

The Hereford is a drooping-eared hog with a red and white color pattern approximating that of the Hereford cow. More information about the Hereford breed can be had by writing Ms. Ruby Schrecengost, National Hereford Hog Record Association, RFD 1, Flandreau, South Dakota 57028.

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The Tamsworth is a red breed with erect ears and known for hardiness and mothering ability. There has been a bit of a rap on this breed for their temperament, but we know of a retired veterinarian with a severely debilitating illness that worked on his Tamsworth baby pigs right in the pen with the sow. Along with the Chester White, Duroc and Black Poland the Tamsworth is a breed I would encourage small producers to consider. More information on this breed is available from Robert Heighfield, Tamsworth Swine Association, 414 Van Peman St., Washington Court House, Ohio 43160.

We were unable to find an address for a breed association for the Ohio Improved Chesters (often called OIC's), but they were still being bred quite extensively as late as the 60's and I would suggest that anyone interested in this white breed similar to the Chester White might contact someone in one of the Ohio state colleges or write Dan Parrish, Chester White Office, P.O. Box 228, Rochester, IN 46975. The Wessex breed is an English variety with a Hampshire color pattern, but with drooping ears and exceptional length. It has even been rumored that with the recent changes in Hampshire breed type some breeders have been importing Wessex semen to "achieve" desired changes. Tweddle Farms of Canada has advertised this breed in the past.

My needle evergreens were stripped by the gypsy moth caterpillars. Are they dead?

Not knowing whether you are referring to spruce, hemlock or pine, the three plants will be discussed separately.

The hemlocks are the definite loser. The caterpillars chewed the needles and also removed the bark and buds from this year's growth. If the buds, small round bumps along the twig, are not there, the branch is dead. Similar damage over the entire tree means the tree is dead.

The spruces fared better. Though stripped of foliage, the buds were large enough to escape the jaws of the caterpillars. These will most likely survive; however, they will look thin for a few years.

The pines are a mixed lot. If the defoliation took place when the new growth, called candles, was small and if the buds were destroyed, the tree will not survive.

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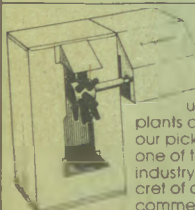
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The Feedbag

home gardening

Concern about food prices, nutrition, and the quality of produce has led to a worldwide interest in home food production, writes Bruce Stokes of the Worldwatch Institute in his recent book, *Helping Ourselves*. An estimated 43 percent of all U.S. households, or 34 million families, raise vegetables. And in the Soviet Union, 50 million private garden plots produce one third of the vegetables and two thirds of the potatoes raised there.

In the Third World, home gardens often help balance diets that depend too much on starchy foods. In a controlled experiment in a Jamaican parish, a Grow Our Own Food campaign reduced malnutrition among children by half within two years.

packaging more than product

Many processed foods and beverages cost less than the containers that hold them, according to the USDA. For example: Beer cans or bottles cost five times as much as the beer; potato chip bags and soft drink bottles twice as much as the product and packaged breakfast cereals one and a half times the product's value.

volunteers needed

The National Institutes of Health are supporting a program at four medical institutions across the United States. **VOLUNTEERS ARE NEEDED** to help combat America's number one killer, atherosclerosis. The disease is basically responsible for heart attack, strokes and related fatal diseases that account for 800,000 lives in the U.S. annually.

The study is seeking persons who:
*are the ages of 29 through 64 *have suffered their first and only heart attack within the last five years *have not had a stroke *do not have diabetes *have not undergone heart surgery.

You may qualify as a volunteer. You are urged to contact one of the following Hyperlipidemia Study Centers.

EASTERN CENTER-Philadelphia
215-645-3340 Collect or
1-800-362-5244 in Pennsylvania

MIDWEST CENTER-Minneapolis
612-376-4494 Collect

SOUTHERN CENTER-Little Rock
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The study works closely with each person's physician. Travel expense is reimbursed and accommodations are provided.

beware of tree warps

The needed care to get trees through the winter can come from wrapping the trunks of young fruit

and shade trees to protect them from rodent damage and from sunscald, advises Don Kinzler, extension associate horticulturist at North Dakota State University. Heavy paper, burlap or similar material will serve as tree wrapping. Recently, white plastic spiral tubes have also become increasingly popular.

During the summer growing season, tree trunks are increasing in diameter. Any tree wrap that fails to expand properly will restrict trunk growth, causing a girdling constriction. Therefore, loosen tight tree wraps during the summer to permit normal trunk expansion.

If you're using white plastic tree spirals, a note of caution is in order. These spirals are built to expand with the tree's growth with the intent that the tubular wrap may be left on the tree so you don't have to remove and replace it annually.

"However," says Kinzler, "we have observed that in numerous cases that these spiral wraps have been binding, with coils overlapping and preventing normal expansion of the tube. We have noticed this binding has been girdling and constricting some young trees. In severe cases, the tree trunk develops deep spiral indentations. Naturally, this girdle interferes with movement of water and food within the tree. So if you're using plastic spiral tree wraps, loosen them several times or remove them during the summer to prevent binding and girdling.

"I have also noticed that many tree wraps keep the tree bark fairly damp during the summer. This moisture seems to provide a good environment for insects and the like. So perhaps it's wise to remove the wrap completely for at least a part of the summer to allow proper air circulation," the horticulturist advises.

Young trees need the added protection--afforded through wrappings--to protect them from rodent damage and from sunscald. Sunscald occurs in late winter. It is due to the warmth of the sun exciting activity in the tissues alternating with low temperatures at night, usually on south and west sides of the tree. Wrapping the trunk prevents winter sun from being absorbed by the tree trunk. Sunscald is most severe on trees having relatively dark colored bark such as fruit trees. ☐

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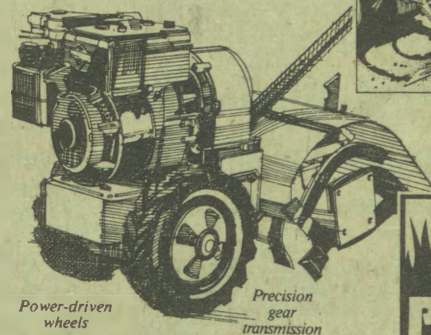
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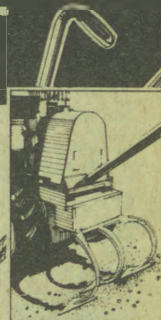
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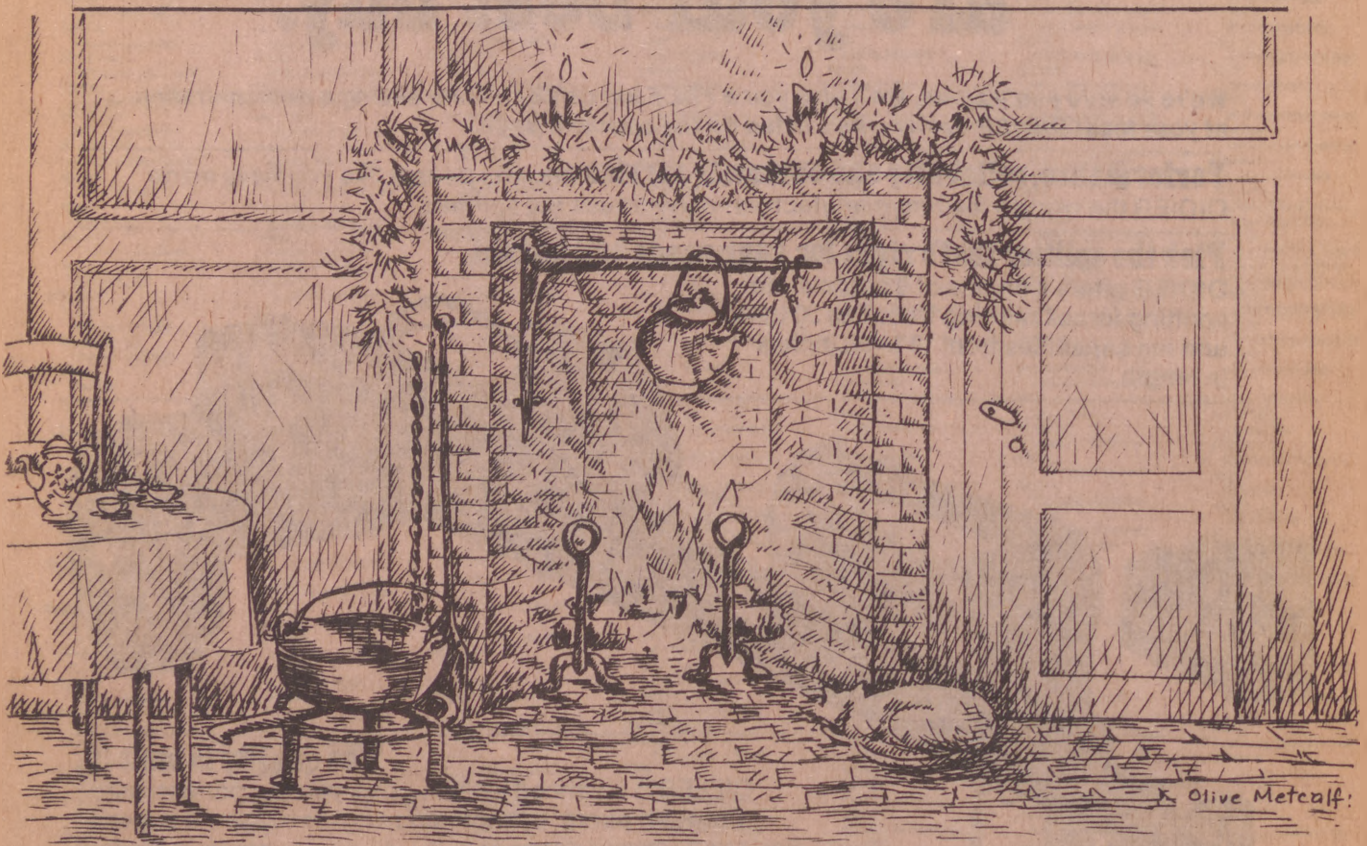
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The Rumford Fireplace

An 18th Century idea that still works.



by Arnold Waldstein

One of the ironies born out of the current energy crisis is the terrible eagerness with which we pursue newer technologies, and thereby miss our chance to recover the forgotten and simpler arts. Yet, we will do well to look back now and then, not as escapist but with an eye to creative restoration; for many old methods still work astonishingly well and also avoid the excesses of our modern "advanced" designs.

In the fireplace, for example, architects and homebuilders alike can find in the past a height of technological integrity and perfection absent today. I am speaking particularly of the discoveries and designs of an 18th century genius named Sir Benjamin Thompson, Count of Rumford.

When Count Rumford redesigned the smoky and inefficient fireplace in 1795, he instituted a constructional model quite superior to what preceded it and certainly better than

most fireplaces built today. Indeed, our typical modern fireplace is just as incorrect as the ones built before Rumford's new theories concerning radiant heat. Ours are merely pressed into a new shape, torn out of the wall and fabricated out of sheet metal. What has been ignored however, is nothing less than the basic laws of physics which Rumford discovered. Let's examine the discoveries of Count Rumford, and see how he integrated his ideas into a working model.

In Rumford's day the fireplace was an immense structure, sitting well out into a room. There was no design feature to handle either down drafts or smoke escape. In all simplicity, it was a large box with a straight chimney on top. What Rumford accomplished was to incorporate three new constructional principles which were essentially unknown prior to 1795 and remained unmodified up to the twentieth century.

Rumford's greatest discovery was the smoke shelf. By this addition, he eliminated in one step the creation of a down draft in the chimney and likewise reduced the possibility of smoke escaping into the room. By introducing a shelf (something to stop the air) and then redirecting the cold air up the chimney, he created a system of air hydraulics. Rumford used the downdraft to enforce a circulation of hot air from the fire below the smoke shelf.

Smoke from a freshly started fire needs an unobstructed passage up the chimney. Rumford provided this passage by pushing the fireplace backwards, into the chimney itself. This creates a straight line down the center of the chimney into the middle of the firebox. In this way the smoke has only to rise straight up, creating a better draft and a smooth escape passage.

Count Rumford was the first individual to use the phrase 'Radiant

Heat.' He realized that we are warmed not by the flames of a fire, but by the radiant heat waves coming outwards into the room. Fireplaces re-radiate heat. By the angular arrangement of the sides of the firebox, the heat waves are reflected into the room where the heat is absorbed by people and stored by household objects. It is this principle of re-radiation coupled with the design necessities of the smoke shelf, which create the distinct look of a Rumford fireplace.

In 1969 Vrest Orton published a book entitled *The Forgotten Art of Building a Good Fireplace*. Orton is a notable researcher but excludes a few conceptual ideas which limit the efficiency of the Rumford design. Primarily, Orton calls for a flat smoke shelf, which would stop the downdraft of cold air, but likewise impede the redirection of air upwards. The smoke shelf should be rounded to enhance the air passage. In addition, the book stresses an exactness of measurement in order to reap the benefits of Rumford's design. The sloping sides (the coving) and back of a Rumford firebox are pertinent only as they affect the re-radiation of heat. The sides must be pointed outwards only insofar as they radiate towards the room. The slope of the back must be angled only in relation to the re-radiation being high enough to heat more than just the fireplace hearth. By these principles it is possible to increase the depth of the firebox to receive a larger log while still retaining the re-radiation properties of the design.



At the turn of the 19th century, the Rumford fireplace was the apex of both conservational and aesthetic design. His concept called for a high, shallow structure taking up almost no space while providing the maximum efficiency in heat projection. The question of why we now have a squat, protruding structure is surprisingly simple. It is a factor of utility. When Rumford was busy repairing smoky fireplaces, they were the predominant

Count Rumford:

A Toast to the Ghost of Sir Benjamin Thompson!

Who remembers learning about Sir Benjamin Thompson, Count Rumford in history class? Most likely, no one. Yet in his own right this obscure figure was just as brilliant a philosopher, physicist, inventor and political scientist as his contemporary, Ben Franklin.

Rumford was born in 1753 in Massachusetts, a farmer's son. He was essentially a self-taught man; at fourteen he was already learned in geometry, algebra, astronomy and higher mathematics. Later, his loyalty to the King (George III), his close association with the British and his conservative politics put him in disfavor with the radicals of Boston. Once, he was almost tarred and feathered as a traitor by a revolutionary mob in Concord, New Hampshire, but managed to escape into Boston.

It is more than possible that his being branded as a "Tory" caused this genius to be overlooked and virtually scratched out of our American history texts. But what are some of his actual accomplishments?

As a social scientist, Rumford concerned himself with raising the quality of human life: improving the lot of soldiers through better nutrition; devising more modern methods of reorganizing hospitals and almshouses; instructing people in domestic economy; investigating abuses in usury. As a militarist and strategist, he reorganized the Bavarian army; invented a method of signalling and made great advances in logistics. As a diplomat, he saved Munich from an invasion by Austria and France.

A scientist and inventor, Rumford undertook a study of the tensile strength of silk and the warming qualities of wool cloth. He also discovered convection currents; the photometer; a method of boring cannon; the calorimeter to measure combustion in wood, coal

and other fuels; the use of portable cooking utensils; invented the drip coffee pot; devised a system of steam heating homes; made advances in the lighting of houses and in the manufacture of gunpowder.



Today, he is best recognized for the fireplace bearing his name and for his cures for smoky chimneys, including the invention of the damper as we know it today.

Benjamin Franklin also realized that something had to be done about those horrible smoky fireplaces, and although he accurately speculated about whys and wherefores, his essential solution was to dismiss the fireplace altogether and to invent the stove.

Rumford, however, analyzed the situation closely and was the first to discover the principle and to use the term "radiant heat." Furthermore, he discovered that heat was not a concrete substance (the popular notion of his time), but was produced by a motion of particles. Rumford revealed not only what was wrong with the fireplace but demonstrated why and how to correct the defects. His principles still work.

In 1798 Rumford presented to the Royal Society his famous "Enquiry Concerning the Source of Heat Which is Excited by Friction." In his thought he was more like our modern physicists, and actually championed our modern methods of research--studying the fundamentals before attempting to make practical applications.

--L.A.A. □

Reference:

The Forgotten Art of Building a Good Fireplace. By Vrest Orton. Yankee, Inc., Dublin, New Hampshire.

source of heat in a home. With the advent of central heating, the functional quality of the structure diminished. It is at this point that architects were given free reign to drastically alter fireplace design with no regard to any restriction other than consumer appeal. There are six major latter day alterations which resembles a reverse evolution from basic physics to pure fancy. It is important to notice how each alteration pushes the fireplace closer to a stereotype of what preceeded Rumford's modifications.

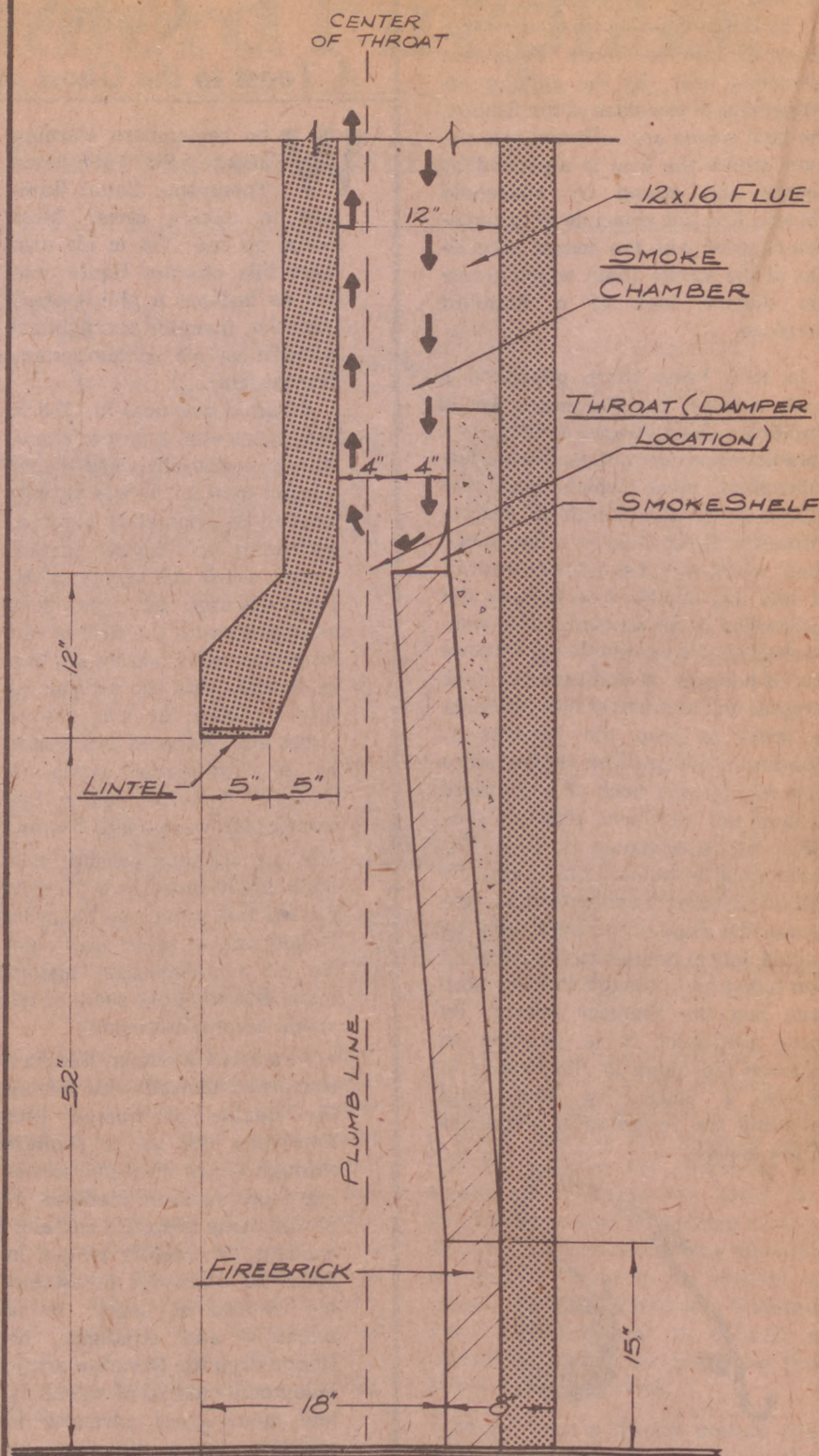
Fireplace Alterations

The modern fireplace rarely has the flue directly over the firebox. Just as Rumford pushed the fireplace back out of the room to create a vertical smoke escape, architects have pulled it into the room. In addition, the current fashion of double fireplaces (one above each other on different floors) creates design problems. With a double fireplace the main floor (or basement) fireplace can still sit below the chimney. Additional fireplaces would have to be further out into the room to compensate for an overcrowding of flues.

The Rumford fireplace has an extremely high front opening. Modern design calls for a decreased opening of 24-30 inches. This has three disastrous results. Aesthetically, you can no longer see the flames. But more important, it dictates a change in firebox proportions. With less surface on the back wall of the firebox, there is proportionately less re-radiation affected. This means less heat coming into the room. In addition, as you drop the height of the back wall, you change the angle, making it more acute. Instead of reflecting the heat outwards, it is angled down, heating not the room but the hearth.

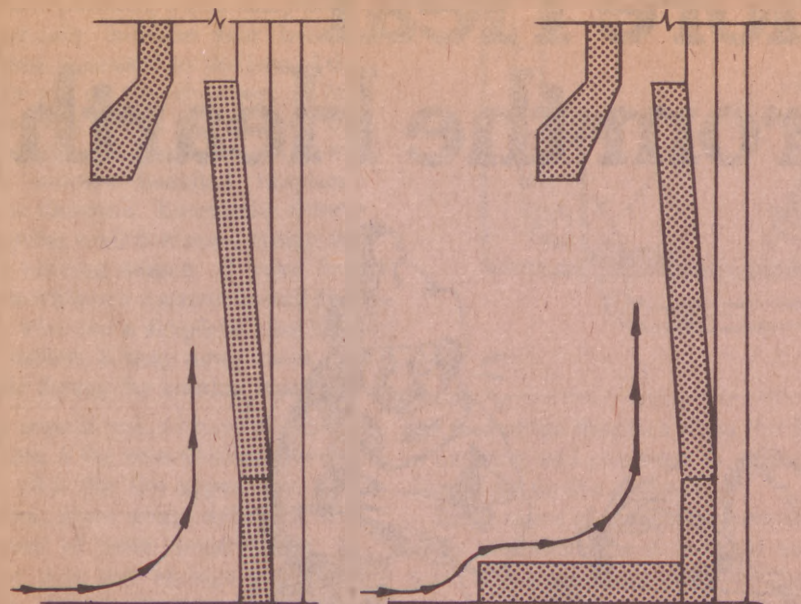
When Rumford created a shallow firebox, he intentionally changed the angle of the side walls (the coving). With this improvement the heat was radiated outwards towards the room. Modern design has squared off the firebox causing the side walls to reflect across the firebox into each other. Consequently, this causes the fireplace to retain its own heat.

Rumford was aware that air circulation was necessary to create a draft for the fire. Modern design almost



Rumford Fireplace Side Elevation

This view shows the smoke shelf, located on the back wall or throat of the chimney. It's function is to mix the air, as the arrows indicate. The cold air drops down the chimney and bounces off the shelf toward the front. It then mixes with the hot rising air from the fire. This circular action creates a strong and steady draft.



Flat Hearth Raised Hearth

Air Flow → → → → →

This diagram shows how a raised hearth restricts air flow and diminishes the fireplace opening.

always calls for a raised hearth. This modification again restricts the air-flow. Cold air from the floor of the room now has the additional obstacle of the hearth in its passage to feed the fire. Also, by raising the hearth, the fireplace opening is again diminished, resulting in a disproportion in the angles of the back and sides of the firebox.

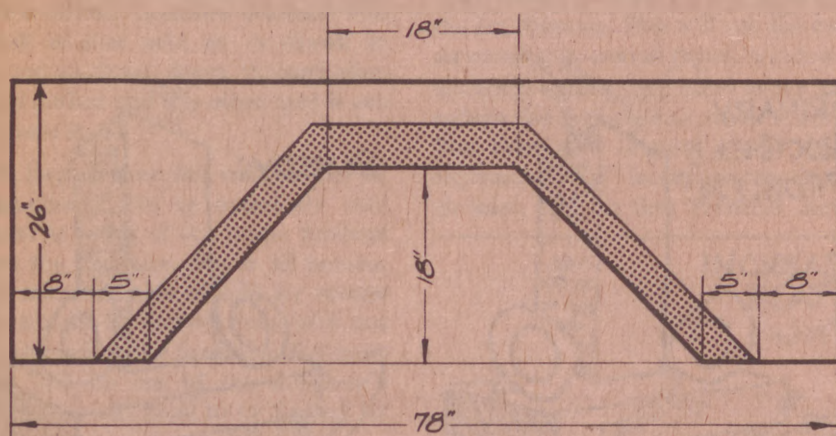
Of all the abuses the fireplace has suffered at the hands of modern design, the heatilator unit shows the utmost disregard for the fireplaces' heat possibilities. To understand why a metal box cannot possibly be an efficient housing for a fireplace we must look to two basic laws of physics--"The best radiators of heat are perfect absorbers of heat" and "A good conductor of heat is a poor radiator." We have seen how Rumford utilized the concept of radiation and angled his fireplace to maximize the reflecting possibilities of the design.

Metal (the heatilator) is an excellent conductor of heat and likewise a poor radiator. When you heat the walls of a heatilator unit, your heat transfer stops there--no re-radiation and no absorption. Brick is not only a good radiator, but by its thermal mass, will continue to hold heat and radiate after the fire is out. Masonry radiates as well as it stores heat from the fire.

The flues used on a contemporary chimney are too small to insure an adequate draft. The construction industry invariably uses an 8 x 16 or 12 x 12 inch flue. A 12 x 16 or the largest available size should always be used. This aspect of construction is completely a matter of decreasing costs. And here, like all the other modifications, the decrease in cost is offset by the heat loss and heat inefficiency of the fireplace installed in the home.

Let's hope that the fireplace will not, once more, be boarded over or used simply as a chimney for the wood heater. Not only can we build Rumford styled fireplaces that are efficient and aesthetic, but we can utilize conservational design to integrate them into our homes. With the benefits of advanced house designs and the common sense improvements of passive solar architecture, we can reinstate the fireplace as a valid heat source for the home. □

Arnold Waldstein lives and writes in Seattle, Washington. Fireplace art by Olive Metcalf. Diagrams by P. Bendix.



Plan View

This view shows the fireback [back wall of the fireplace]. Its dimension [width] should be the same as the depth. All measurements shown are on the floor of the hearth.

More Heat From the Hearth

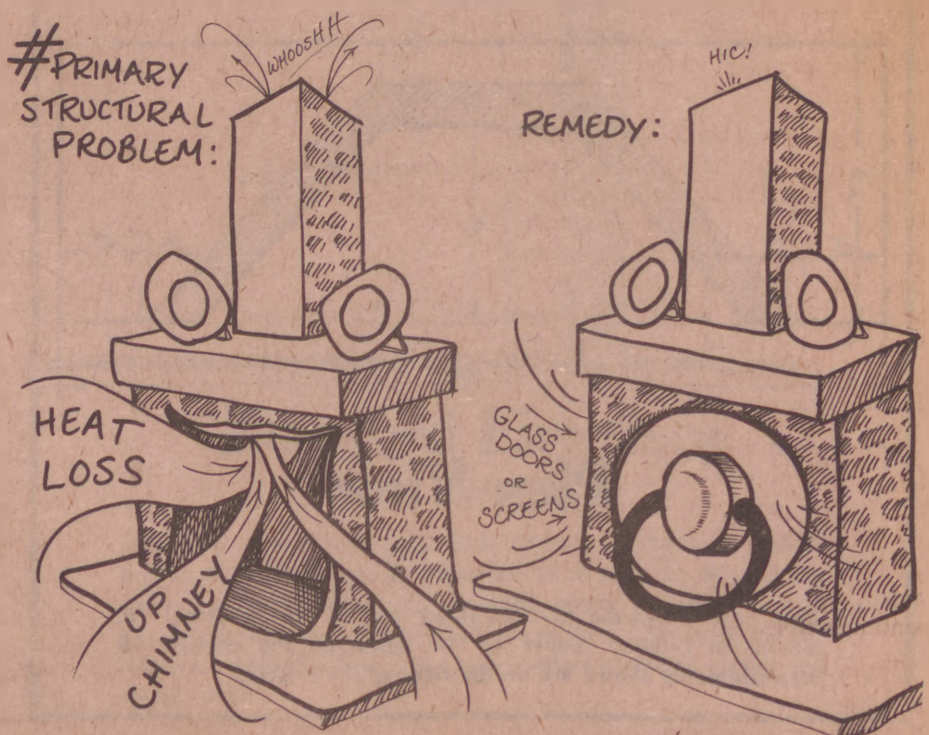


*Does your fireplace leave you cold?
There are things you can do to remedy its inefficiency.*

by Stephen Kokette

Before Ben Franklin and others modified the wood burning stove, the fireplace was the home's only heat source. But that newfangled stove out of Philadelphia had three tremendous advantages over the fireplace. First, it burned wood more efficiently so less wood need be cut and gathered each year. Second, it was easier to cook on a wood burning stove. And finally, a wood stove could be centrally located in a room for better heat distribution.

So during the 19th century, homes were usually designed without the fireplace in favor of the wood stove. The fireplace was reintroduced in the 20th century home as a luxury device only. And, in the century in which we did not use the hearth, we forgot or became unconcerned with building them as efficiently as possible.



The fireplace has two serious structural problems. The primary structural problem, which many claim will actually increase your heating expenses, is caused by the loss of the home's air up the chimney. A few people who don't even use the fireplace have this problem too. Some home builders installed fireplaces without dampers. Essentially this is like leaving a window open during the entire heating season. If your fireplace is without a damper, install one. Those who use a fireplace also have this problem if they never close the damper during the heating season.

But even if you do have a damper and close it the recommended twelve hours after the fire appears to have gone out, some would still insist that the cost of your wood might be greater than any savings you could realize. Why? Because while the fireplace is casting that overbearing heat into your home, it's also creating temperatures in the chimney which are usually well over 150 degrees F..

Cool air is attracted to warm air. And the air in your home, which is between 60 - 70 degrees F., is relatively cool in comparison to the hot temperatures in the flue. So even while the fire is burning intensely, the home is constantly losing air up the chimney.

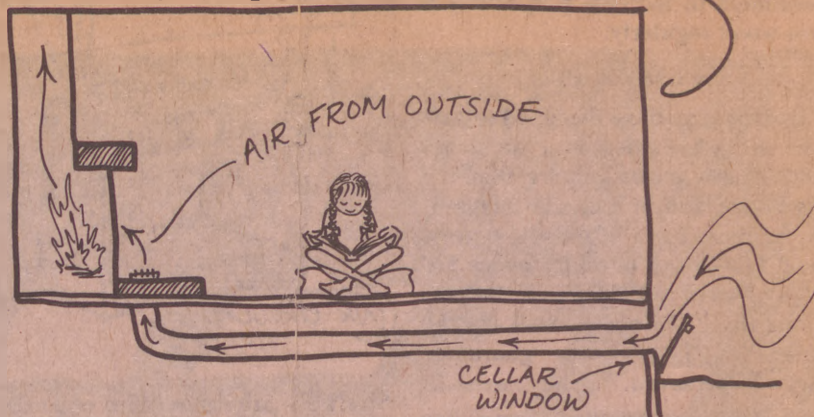
If this lost air were not replaced, the home would become a vacuum. The home automatically replaces this air when the air pressure inside falls below the air pressure outside. The result is that cold air is drawn in around windows, doors, through electrical outlets and any other spot it can squeeze in.

In large homes this cold air can be dramatically felt in extremely cold rooms in areas of the home furthest from the fireplace. But in all homes, this reintroduction of cold air means that it must be heated. Some of it can be warmed by the fireplace. But most of it will be out of the fireplace's range and will need to be heated by another heat source.

The problem becomes much worse as the fire starts to expire. At first, the fire is probably acting as an overall heat gain for the home. But as the fire dies, its heat output dwindles drastically as the home's warm air continues to leave via the chimney.

There are two ways to correct this problem. One involves the utilization of some type of shield to place across

VENTING OUTSIDE AIR TO FIREPLACE



the face of the fireplace when the fire is expiring and you want to stop the flow of air up the chimney.

Three types of shields are commercially available. The oldest and most popular is glass doors. Because there are many glass door manufacturers, it pays to compare prices. Also, the more effective glass doors will be those that attempt to cover the entire surface of the fireplace's face.

Two recently marketed shields are made of non-flammable canvas material. One is a screen that must be put in place manually. The other is an asbestos treated shade that is installed in the same manner as a window shade.

A second method of alleviating the loss of air from the home is by venting outside air to the fireplace. The coldest air in the vicinity of the fireplace (the air entering from outside) will be attracted up the hot chimney. This will cut the cold air coming in around doors, windows, electrical outlets, and other areas and reduce the furnace's or stove's work. Ben Franklin's original 1742 "Pennsylvania Stove" incorporated a fresh air inlet, and his first Franklin Stove

was more efficient than modern Franklin type stoves.

Products are available to help in venting outside air to the hearth, but if you're a do-it-yourselfer, you may want to create your own venting system. The easiest method is to run a duct from a basement window through the basement and up through the brick or stone in front of the fireplace, where a vent will be placed. If you don't have a basement and the fireplace is on an outside wall, you may want to bring a duct, with a vent, through the brick or stone wall. If you don't have a basement or fireplace on an outside wall, good luck. Any duct system should not vent air from an area where cars idle and should include some type of damper so you can control the flow of air and keep outside air out of the home when you're not using the fireplace.

The second structural problem with the fireplace is that it produces so little heat. A University of Illinois study found that the home receives only 10-15 percent of the heat produced by the fire--the rest goes up the chimney. You may be satisfied with the heat produced by the fire,

INCREASE HEAT OUTPUT WITH ...



the fire, but it would be a wise investment to increase output if you burn wood regularly.

The Radiant Grate

Radiant grates are designed to cast more of the fire's heat into the home. Some of the grates require that the logs be stacked in a certain manner. One manufacturer claims his grate saved \$100 worth of oil for every \$70 worth of wood at 1973 prices. He also admits that "No two houses are the same...You just cannot guarantee what will be saved."

At least one radiant grate has cooking accessories too. These include a grill, stove, rotisserie, and oven. Energy can be saved by using these instead of your gas or electric appliances.

Another useful product, which is often built into European fireplaces, is a heat reflector. One manufacturer boasts that they can increase heat output up to three times by reducing the depth of the fireplace and reflecting more heat into the room. The reflectors are made of metal panels which are placed at the back of the fireplace.

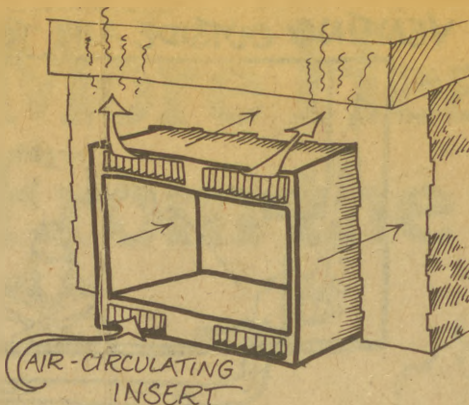
A third beneficial product would be a grate made of pipes to circulate hot water to the home. These grates can be used in homes heated by traditional hot water systems and solar energy. The manufacturers claim they can cut central heating expenses from one-third to three-quarters or more.

The water pipe grates could also be hooked up to a hot water heater. Homeowners generally spend 5 - 15 percent of their annual energy bill on heating water and for those with electric water heating and already using the fireplace a lot, such a grate might pay for itself within two or three years.

Forced Air

Three types of products circulate air from the home near the fire and redirect it back into the home at a higher temperature. Some of these products may be capable of heating entire small homes.

Two of the products--convection air devices and forced air devices--are often nearly identical. Convection air devices are grates with C-shaped tubes that have the home's cooler air from the floor area enter the grate, circulate through the fire, and be expelled into the room near the top of the fireplace.



There are three types of forced air devices. The common feature of all three is the small fan that is used to move air through the tubes. Usually these devices produce more heat than convection devices. Most forced air devices are C-shaped like convection devices.

A second type has a box-shaped structure that is part of the grate, or situated next to the grate, so it can heat incoming cold air. The last type is placed in the lintel area of the fireplace.

Of the C-shaped grates, the forced air devices should last longer than convection devices. Eventually the C-shaped tubes will burn out, but it takes longer with forced air devices because the circulated air in the tubes keeps the tubes cooler. The thickness of the metal used has an effect on tube life too.

The owner of a convection or forced air device should watch for tube burn outs. Very few manufacturers inform the consumer that an undetected burn out could be dangerous and permit carbon monoxide and/or smoke to be emitted into the room. With some of

the burn outs tubes can be replaced or new metal surfaces built on.

Steps can be taken to prolong the life of these devices. One manufacturer recommends using a wire brush to scrape off the carbon deposits after the heating season and then applying a thin coat of oil or spray paint to prevent rusting during the summer.

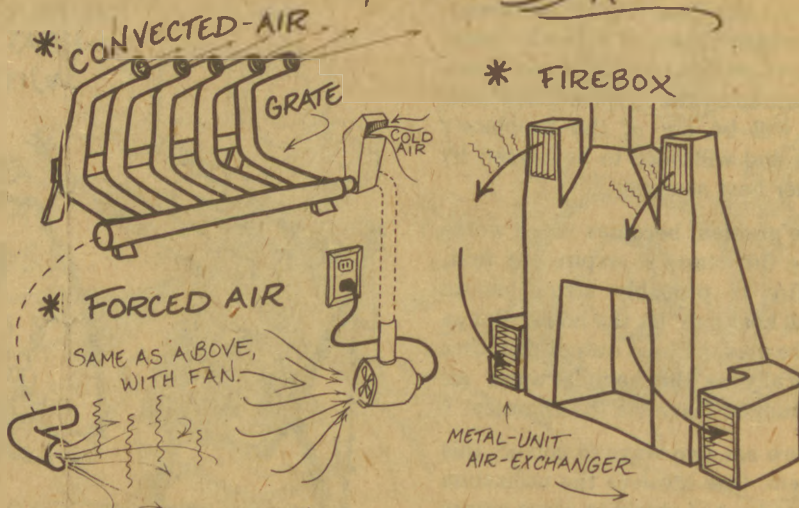
For forced air devices, oil the blower periodically and position it so that there are no obstructions in the path of entering air. Do not burn a fire without the fan on. During power blackouts, remove the blower and the duct between the blower and tubes if you intend to use the device as a source of emergency heating. C-shaped forced air devices are best for emergency heating.

A few welders are beginning to custom make convection air devices that may be better than most of the forced air devices on the market. Some custom made jobs could be hooked up to a small fan for better heat distribution and a prolonged life. The two best welder made devices I've seen are out of Vermont and Wisconsin. Their design and thicker metal could be worth the added expense of a custom made product.

The third product that reheats the home's air is a firebox. Most fireboxes are built for installation while the home is being constructed, but some are designed to slip into existing fireplaces.

Stephen Kokette is the author of *Energy Saving Products and Projects*, reviewed in *Farmstead*, Winter 1980. He lives in Madison, Wisconsin. Art by Liz Buell.

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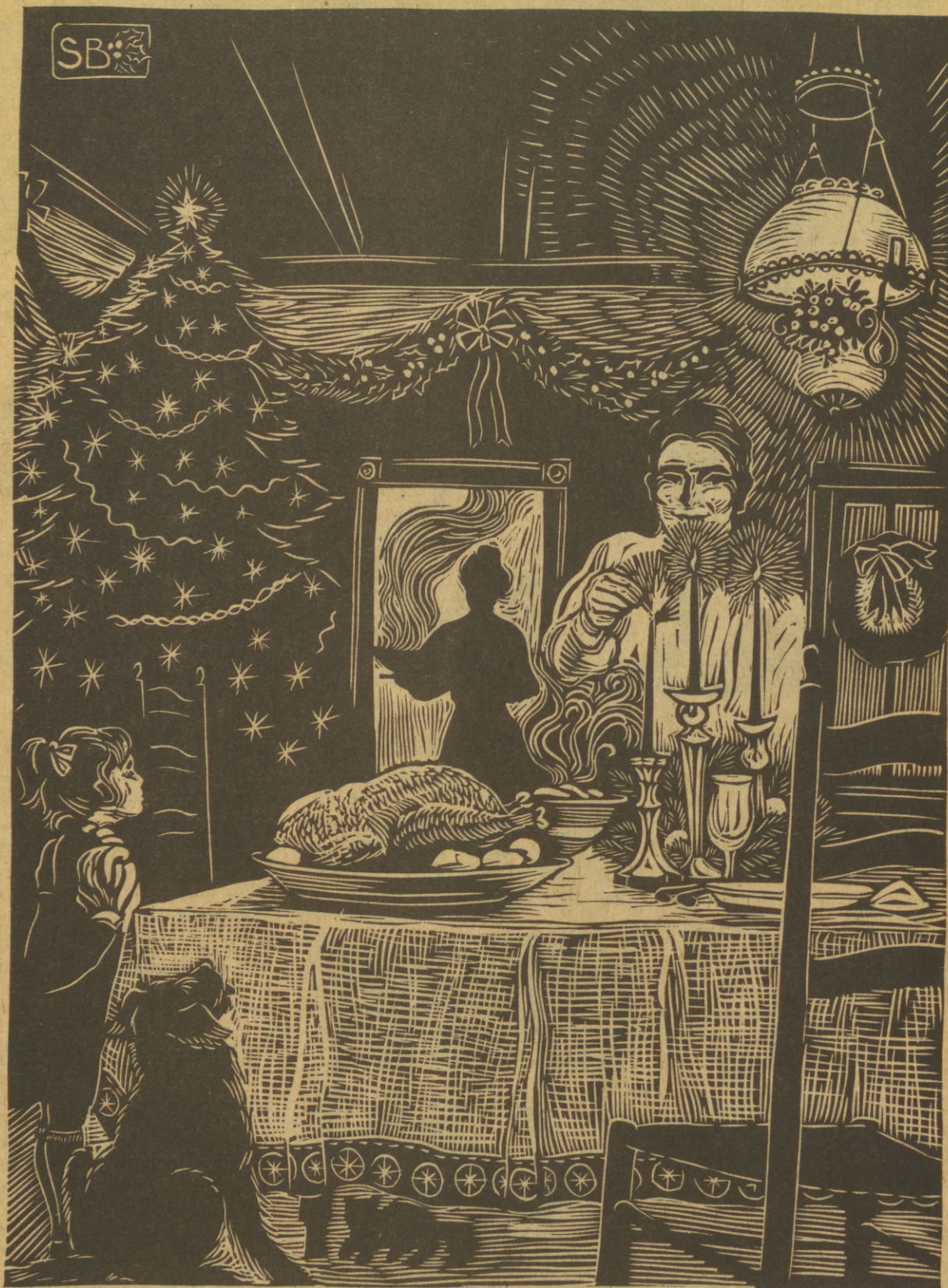
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THE HOLIDAY TABLE



Hurrah for the Goose!



by Gerry Willems

It was many years ago that I prepared my first Christmas goose, but I still remember that occasion so very well. I hadn't planned to cook one. In those days in Europe we always had chicken for our Christmas dinner. Turkey or other fowl were luxuries only a few could afford. But all of a sudden I found that I had to prepare one. Our holiday guest, who was to arrive on Christmas Eve, had graciously ordered us one and had it delivered at our house the day before. I still vividly remember that big box being opened and the large, plump goose being lifted out on the table. I was a bit shocked, and looked at that bird with a certain trepidation. Was I, with my little cooking experience (I'd only been married a few years), expected to prepare this delicacy for our Christmas meal? I couldn't disappoint our guest, nor my husband whose mouth was already watering at the thought of taking a bite of tender, juicy roast goose.

I decided to make the best of the awkward situation and set to work. I don't exactly remember where I found the recipe, how heavy the goose was (it was huge, believe me) or how many hours it roasted. But what I do remember are the exclamations of

surprise and appreciation when the goose appeared at the table: delicious smelling, perfectly roasted--and tasting out of this world! Everybody loved it, and this delicious meat has been on our "special food" list since. So if you want an enticing change in your Christmas dinner, I wholeheartedly recommend a goose.

Let me first tell you a bit more about past and present uses of these gourmet birds.

That some of us are not overly enthusiastic about a goose dinner is often due to the fact that our first sample proved to be a rather tough (albeit tasty), fatty bird. Tough, because it was too old when butchered (geese can easily live 25-30 years, and even in some cases up to 50 years). Fatty, because formerly geese were specially fattened for slaughter. This increased their weight and consequently the price. Moreover, goose-fat had many culinary applications. Another source of overly fat geese are the birds which are force-fed (noodled) to obtain the highly-prized large goose liver which, combined with "truffles," are used for the "pate de foie gras" delicacy.

Yet, basically, the goose has been the poor farmer's festive table luxury for ages. It is one of the oldest domesticated fowl, and in Egyptian wall drawings dated around 3,000

B.C., various kinds can be identified. Geese can be raised almost totally on pasture, even rather poor marshy fields, as long as it is succulent. Therefore, as soon as good grass was no longer available, it was time to slaughter and market the geese.

In England, St. Michael's Day on the 29th of September, was traditionally a day to eat "green" geese (usually 3-4 months old) and in the same country, on the last Thursday, Friday and Saturday in October, the Nottingham Goose Fair, (which dates from 1284), is still used to market surplus young geese. The famous Christmas goose tends to be a bit fatter and heavier, but if prepared properly, is an extremely tasty dish. Not only is it tasty but also healthy, as the meat has a higher protein content compared to chicken, beef or pork, and is also relatively low in calories compared to those other meats.

So if you want to enjoy a goose on the table, be it only for the holidays, look for a young one in the fall--(a so-called junior goose raised that same year), and keep it in your freezer till Christmas or Thanksgiving. Or, buy a fresh one at Christmas (be sure to get a less-than-one-year-old one) which will be a little heavier and a bit more fatty, but will make a delicious, extra savory dish.

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The live weight of geese can vary between 10 to 25 pounds and up, depending on the breed. In dressing the goose you might lose about 30 percent in weight. As the proportion of meat to bone in a goose is not as favorable as it is in turkey, count on about one and a half to two pounds dressed weight per person. In other words, one 9-12 pound goose, (dressed weight) will feed up to 6 people. And don't throw out the liver. Even without truffles it is still a delicacy.

If you can buy a fresh goose, fine. If not, a frozen one will do very well. If your goose is frozen, place it, still in its original wrap, on a tray in the refrigerator for one or one and a half days to thaw. The goose can also be thawed more quickly if it is placed, unwrapped, in a container or in a sink with cold water. This takes about four to five hours. Left to thaw at room temperature (in wrapper) requires six to ten hours.

Take out the neck and giblets and simmer these in water spiced with pepper, salt, a sprig of parsley and a small onion (I also add some carrots and celery to enhance the taste) for an hour, and reserve broth for gravy. When you are ready to start preparing the goose, rinse the bird inside and outside, drain, and pat dry with paper towels. Rub the skin and cavity with pepper and salt, and fill cavity with stuffing.

Because the goose is fatter than a turkey the recommended stuffing is usually more of a tart nature than for other fowl. My favorite stuffing is:



APPLE FRUIT STUFFING

4 apples, sliced
1 pound prunes, apricots or mixed dried fruits, cooked and cored
½ cup raisins
1 Tablespoon sugar
1 teaspoon lemon juice
¼ teaspoon cinnamon

(Optional: 2 cups crumbs, 1 med. onion, ¼ t. salt, ¼ cup water, 2 T butter, dash salt and pepper)

The dried fruits should, of course, be soaked for several hours or pre-cooked, and if necessary pitted. To this fruit mixture one can add one or two cups of bread crumbs, if desired. In this case also add ¼ cup of water and 2 tablespoons of melted butter. And don't forget to sprinkle the fruits with some sugar and cinnamon.

ONION, BREAD AND RICE STUFFING

3 cups bread crumbs
2 medium onions, boiled and mashed
½ cup cooked rice
1 teaspoon powdered sage
½ teaspoon salt
1 Tablespoon melted butter
¾ cup milk
Dash of pepper

(Optional: half a pound of sliced and fried mushrooms).

A little advice: If you happen to buy a real big older goose, pre-boil it for an hour in water with salt, pepper and an onion. Then drain, dry and proceed with roasting in the way as described.

Fill neck and body cavity loosely with stuffing. Close the neck opening with a skewer and tie the legs together with a string, or tuck the legs in the band of skin at the tail, as you would do with a turkey. Then place the goose on a rack in a roasting pan, breastside up, and roast uncovered in a preheated oven (400 degrees) for one hour. There is no need to baste it



because of the fat skin. Then turn the oven thermostat down to 325 degrees, and roast two more hours for medium, or two and a half hours for a larger bird. (If your bird is young and not very fat, cover the breast at this time with a sheet of aluminum foil and remove it toward the end for final browning). A meat thermometer should register 185 degrees when your bird is done. If you don't use a thermometer, you can check doneness in several ways: Press the meaty part of the leg between (covered) fingers--it should feel very soft. You can also prick the thigh with a fork and look at the color of the juices. They should be beige, not pinkish. Or, you can move the drumstick up and down. The joint should yield readily or twist out.

When the goose is done, take it off the rack and prepare the gravy. I do this by adding a cup of water to the fat drippings in the roasting pan, then pour it all in a container which I put in the freezer for half an hour till the fat has congealed and can be spooned off. Reheat the remaining broth, (Add more liquid if you don't seem to have enough.) Then add three tablespoons of sherry, salt and pepper to taste, and thicken it with one tablespoon flour. You'll have a delicious gravy, a favorite of my family.

Traditional Vegetables

Which vegetables go well with a goose? A traditional vegetable (and one I like best) is red cabbage. Even if you are not a red cabbage fan, if you try this tangy recipe, I bet you'll like it.

HOLIDAY RED CABBAGE

- 1 large red cabbage
- 1 cup sweetened applesauce
- 1 Tablespoon lemon juice
- ½ teaspoon ground cloves
- ¼ teaspoon cinnamon
- 1 teaspoon salt
- 1 Tablespoon butter

Cut the cabbage into one-inch pieces. Wash, and cook with approximately a half cup of water and one teaspoon of salt for about 30 minutes. Add applesauce, lemon juice and spices. Simmer for another ten minutes. If it's still very moist, let the cabbage cook on a high heat until most of the moisture has evaporated. Keep watching it, and stir occasionally. Then add one tablespoon of flour while stirring and let cook another minute. Add the butter. Taste to see if it needs added seasoning.

With the red cabbage I always serve a side dish of potatoes, either mashed or cooked, or a rice dish consisting of:

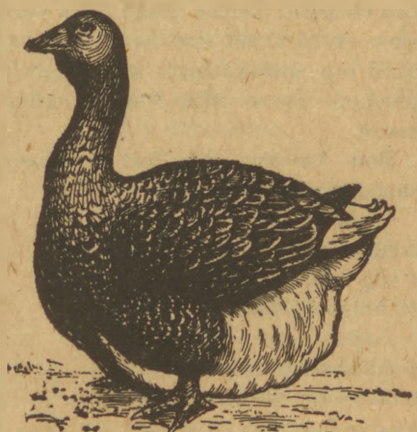
- 3 cups cooked (1½ cup uncooked) rice
- ½ lb. sliced and fried mushrooms
- 1 onion
- 2 stalks celery (cut into small pieces and fried for a few minutes)
- 1 cup cream of mushroom soup.

Mix it all and put in a casserole dish. Sprinkle with bread crumbs and dots of butter. Bake for 30 minutes, uncovered, in a 350 degree oven. Another fine vegetable with goose is Brussels sprouts, generously coated with butter and nutmeg.

I wish you success with your goose dinner and hope it turns out just as well as my first attempt.

Bon appetit, and happy holidays to you all! □

Gerry Willems lives and cooks on her homestead in Mt. Desert Island, Maine. Art by Siri Beckman.



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Figgy Pudding

...and Other Cherished Holiday Recipes

by Lucretia Douglas

When I was a mere grandmother, my children gathered at home for Thanksgiving and Christmas dinner. Ten years ago, as a great-grandmother, I decided that preparing the whole meal was getting to be too much of a chore, so now the family gathers at my house for holiday desserts and punch. By preparing only dessert I have time to make all their favorites, and I sincerely believe it has worked out as a very enjoyable arrangement.

I serve the dessert buffet style so everyone can pick and choose at will. I love to see their eyes light up when they spy their special favorite pie, cake or pudding. It's worth the effort and expense. It's what makes the Holiday a day apart at our house.

My Date Pudding is a tradition, and my daughter Diana's favorite. I made it while cooking for the treasurer of the Chase Manhattan Bank, and one of his guests gave me eighty-five yards of pinwale corduroy cloth in exchange for the recipe. That was almost thirty years ago, and I still have a few yards of the cloth left.

DATE PUDDING

Grease and flour a 9" x 13" cake pan. Heat oven to 335 degrees F..

Chop one cup of dates and sprinkle with one teaspoon baking soda. Pour one cup of boiling water over them and set aside. Then beat the following ingredients in your mixer until they are light and fluffy:

1 cup sugar
¼ of a stick of butter or oleo
1 egg
Then sift:
1 ¼ cups flour



¼ teaspoon baking powder
¼ teaspoon salt

Add above ingredients to the creamed mixture. Add dates and one cup chopped pecans. Bake (in a very slow oven) about one hour (or less) until top springs back when lightly touched. Serve with Date Pudding sauce.

Boil for five minutes in heavy saucepan:

2 cups sugar
1 cup cold water
½ teaspoon salt
Add:
1 tablespoon butter
1 teaspoon vanilla
½ cup bourbon whisky

Decorate each serving with sweetened whipped cream. This sauce is very rich but delicious.

One of my favorite sauces is economical and easy to make. I think it tastes better than regular steamed pudding.

CRANBERRY STEAMED PUDDING

In a mixer bowl pour half a cup of molasses.

Add: 2 teaspoons baking soda
Stir in: ½ cup of boiling water
Sift: 1 ¼ cups flour
1 teaspoon baking powder
¼ teaspoon salt

Add all this to molasses mixture.

Toss one cup of fresh cranberries with a sprinkling of flour so they won't sink to bottom of pudding and mix in your batter.

Pour this batter into greased mold or greased three pound shortening can and set into a kettle of boiling water. Cover pudding can with aluminum foil, and then put the cover on the kettle. Steam for two hours, maintaining two inches of boiling water around pudding. Pudding can should be set on a trivet or rack in the kettle so it won't scorch on bottom. If you need to add water be sure it is boiling first.

Serve hot slices of cranberry pudding with my special pudding sauce.

CRANBERRY PUDDING SAUCE

Mix:

½ cup sugar
½ cup cream
¼ cup butter

Stir and cook in double boiler for fifteen minutes.

A favorite with the men is Lemon Bread Pudding, served plain or with whipped cream.



LEMON BREAD PUDDING

Turn oven to 375 degrees F. Sprinkle one cup seedless raisins over the bottom of two-quart size casserole. Pour a large-size can of evaporated milk over raisins. Set casserole in pan of hot water.

Now, butter six slices of bread and lay over raisins.

Beat six eggs with one cup sugar, $\frac{1}{2}$ teaspoon salt, 2 teaspoons of lemon extract. Pour over the bread slices, then stir in enough milk to fill casserole. Stir until egg mixture is well blended with bread and raisins. Sprinkle the top with grated nutmeg. Bake in pan of water until custard is set around edge (about an hour) but take it out of the oven before its center rises, in order to keep it creamy.

PINEAPPLE CARROT CAKE

2 cups flour
1 teaspoon soda
2 teaspoons cinnamon
1 teaspoon salt
2 cups sugar
 $1\frac{1}{2}$ cups cooking oil
3 eggs
2 cups finely ground or grated raw carrots
1 cup well-drained crushed pineapple
1 cup coconut (shredded)
1 cup chopped nuts
1 teaspoon vanilla

Beat sugar, eggs and oil until light and creamy. Then sift together flour, soda, cinnamon and salt. Add to egg mixture. Blend well.

Fold in carrots, pineapple, coconut, nuts and vanilla. Bake in greased and floured 9 x 13 inch cake pan at 350 degrees F. for one hour or until done. Cool on rack. When cool frost with cream cheese icing.

CREAM CHEESE ICING

4 ounces of cream cheese, softened
 $\frac{1}{2}$ box confectioners sugar (about 2 cups)
1 teaspoon vanilla
 $\frac{1}{2}$ stick oleo, softened

Whip in mixer and spread over carrot cake. Keeps a week in the refrigerator.

...We Won't Go Until We Get Some!

by Jeanne Murray

FIGGY PUDDING

$\frac{1}{4}$ cup butter
 $\frac{1}{2}$ cup molasses
 $\frac{1}{2}$ cup milk
1 egg
 $1\frac{1}{2}$ cups graham flour
 $\frac{1}{2}$ teaspoon soda
1 teaspoon salt
1 cup figs--cut in small pieces

Melt butter, add molasses, milk, egg, well-beaten dry ingredients, mixed and sifted. Add figs. Turn all this into a buttered mould and cover. Steam for $2\frac{1}{2}$ hours.

Serve with hard sauce or wine sauce.

WINE SAUCE

$\frac{1}{2}$ cup butter
1 cup powdered sugar
3 tablespoons sweet wine
grated nutmeg (to taste)

Cream butter. Add sugar and wine slowly. Sprinkle on the nutmeg. Prepare hard sauce by the same method.

HARD SAUCE

$\frac{1}{3}$ cup butter
1 cup powdered sugar
 $\frac{1}{3}$ teaspoon lemon extract
 $\frac{2}{3}$ teaspoon vanilla extract

FIGGY PUDDING II

3 tablespoons butter
 $\frac{1}{2}$ cup molasses
 $\frac{1}{2}$ cup milk
 $1\frac{1}{2}$ cups flour
 $\frac{1}{2}$ teaspoon soda
 $\frac{1}{4}$ teaspoon each: salt, cloves, allspice, nutmeg
 $\frac{1}{2}$ pound figs--cut in pieces



Use same method as Figgy Pudding recipe above.

Jeanne Murray is a superb cook who lives in Acton, Massachusetts.





Antique Cookie Cutters

by Pamela Boersma

Colonial living centered around the hearth where delicious meals were prepared and where dining was relaxed and unpretentious. The massive fireplace was both a heater and a cookstove, turning out baked goods such as bread and cookies. For convenience sake, a variety of metal utensils were hung around it. Among these wares could be found the delightful tin cookie cutter.

Most every household has its share of hand-fashioned cookie cutters, but neighboring families frequently exchanged patterns for an even greater variety. Some families had their own special cutters depicting their trade or business. If, for instance, a family raised and sold cattle, then the cutter would represent that particular animal or some other feature of the

family concern. Usually these cutters were not lent, but kept for personal use.

The average farm wife had two kinds of cutters, everyday and special occasion. Circles and other geometric shapes served her on a daily basis as did cutters with fluted edges. Fancy shapes or those which had more than one part, were saved for the holidays.

Hearts, rounds and diamonds were among the first shapes assigned to the cookie cutter. Later, the spectrum widened with images of the eagle, star, spade, club, fish, flower and various animals. Household shapes such as the clothespin, broom, basket, gun and hatchet were also used--and transformed into edibles. The tinsmith made the most popular motifs into master tin cookie cutter patterns. But even with the availabil-

ity of such patterns, most of the cutters were copies of whatever the maker happened to be looking at, at the time. This accounted for the wide variety of designs.

There were, though, some shapes which were more popular than others, such as the heart, the two headed bird, the pig and a woman wearing a long dress. But everybody's favorite was the gingerbread man. Today, you can still find this familiar and spritely shape abounding in bakeries and popping in and out of kitchen cookie jars.

Just as there were many shapes, there were many sizes. The smallest cutters were no bigger than a quarter while some gingerbread men stood a plentiful fifteen inches. Most of the cutters averaged between two and



four inches, but there was no hard and fast rule.

Cookie cutters were sometimes fashioned by the householder or else the services of an itinerant tinker were employed. More often than not, the job was delegated to a nearby tinsmith who usually made the cutters out of tin scraps left over from a bigger project. Sometimes discarded tin canisters or cooking utensils were given new life in the form of a cutter. As the nineteenth century drew to a close, a lighter cheaper quality of tin was introduced which made this recycling unnecessary.

All the cutters were basically constructed the same way, no matter who made them. In order to achieve the desired pattern and size, long strips of inch-wide tin were bent and curved. Handles were formed by taking a strip and turning the edges under for strength. The real early cutters were not made out of tin strips but were shaped out of a strong, thin steel plate which had a tin coating. These were heavier than their solid tin counterparts.

After the cutter took shape, the cutting edge was placed on its backing, and solder was applied along the outer edge. The early solder was made with about fifty percent flux (a substance which helps metal fuse together) of rosin. Rosin is a residue left over from the distillation of crude turpentine. This mixture was usually applied by hand and is known as the soft-solder method.

As time went on, a shiny solder was put to use which largely consisted of tin. This enabled the solder to go on smoother and lent itself to a more even coat, thus there were fewer tool marks.

Many of the cutters were crude in construction with little attention paid to detail. Others, however, were made with pride and show quality in workmanship. This is evident by the holes in the backing which were either stamped or punched out, put there to allow air to escape when the cutter

was being applied to the dough. There are some cutters which had six holes, some had less and some had only one. These holes ranged from one-eighth to three-fourths of an inch in diameter. Sometimes a housewife would make an extra hole using a nail, picking up where the tinsmith left off. There was one drawback to punching an extra hole—it tended to weaken and bend the cutter, sometimes rendering it useless.

Later years saw factory made cutters become popular. Among these were sets of twelve tear-shaped cutters of different sizes and packed one inside the other. Factory cutters tended to be more uniform in design and construction. Many retailers of the day such as F. A. Walker offered these factory-made sets.



Selecting Antique Cutters

It's very difficult to tell age on a cutter, as some of them were used only occasionally, and as a result, are in mint condition. A later cutter, say one made in the 1920's or 30's, may appear to be older than it actually is, due to frequent use.

If you want to purchase really old cutters, there is one way to determine age--by the motif. Although this is not a sure-fire method, it does give some indication of the period of manufacture. Many patterns represented a figure of the times, such as a continental soldier on horseback. This may be assigned to the period between the revolution and the end of

the century. Most of the cutters of this period have been lost, destroyed or are in museums, but you can still acquire cutters made during the middle to late nineteenth century. Many cutters take their shapes from the motifs on samplers, painted chests and enameled glass, many of which were dated. By knowing the date of these items, you can just about guess when a particular cutter was made.

The patterns most readily available for collectors include variations of the tulip (other flower patterns are rare), heart and bird. According to a West Coast dealer, many of the patterns are getting harder to find with figurals being the most difficult to locate. Prices vary, with tags of five dollars all the way to several hundred for the hard to find or the out of the ordinary cutter.

The way a cutter was soldered can be another indication of age. If it shows spotty soldering, this assures you that it has been around awhile. If you find a cutter whose cutting edge is secured by a thin, almost invisible line, then the cutter is not much more than fifty years old.

When looking for a cutter, make sure the backing has been sheared close to the outline of the pattern as this is a sign of age. A circular, oval or octagonal backing was used on later cutters. These usually are very shiny, have a thin solder and show few signs of wear.

If the cutter you're thinking about purchasing has a deep cutting edge, chances are that it is very old. It seems that the older the cutter, the deeper the cutting edge. In very late forms the cutting edge decreased to three-eighths of an inch. As you shop, you will find that cutting edges varied exceedingly, ranging from one-fourth to one and three-fourths inches.

With Christmas approaching, you might be on the lookout for santas, stars, Christmas trees and camels. And the cookies made with these old-time cutters will certainly add the charming stamp of tradition to your holidays.



Century Old Recipes

Long ago, recipes were made for big families and produced large quantities. The cookie recipes below which appear in the scrapbook of my great, great grandmother, are no exception. They all yield between seven and ten dozen, which makes them great for holiday giving.

All of the recipes should be rolled thin and cut with your most delightful old and new cutters! You may want to decorate them with icing and colored sugar for holiday appeal. The oven temperatures are approximate, as no temperature was given in the original recipes.

GINGER SNAPS

1 cup sugar
1 cup molassas
1 cup lard
1 egg
7 cups flour
2 teaspoons soda (dissolved in a little vinegar)
2 Tablespoons ginger

Bring the first three ingredients to a boil. Add two cups of the flour, stir well and let cool. Beat in the egg, then add the remaining flour, soda and ginger. Bake in 325 degree F. oven until done.

GERMAN CRISPS

2 cups sugar
1 cup butter
3 eggs
Juice and grated rind of one lemon
Enough flour to roll (about four cups)

Cream butter and sugar. Add slightly beaten eggs along with lemon juice and peel. Mix well. Gradually mix in the flour. Bake in 325 degree F. oven.

JUMBLES

1 cup butter
2 cups sugar
1 cup milk
5 eggs
6 cups flour
1 teaspoon nutmeg
1 teaspoon soda

Cream butter and sugar. Add milk and eggs and blend well. Sift together flour, nutmeg and soda and add to the butter mixture. After the dough is cut into shapes, brush the tops with the white of an egg, then sprinkle with sugar. Bake in 350 degree F. oven.

SPICE COOKIES

3 cups sugar
1 cup butter
4 eggs
1 Tablespoon each cloves, cinnamon, and nutmeg
1 cup chopped currants
Flour enough to roll (about four to five cups).

Cream butter and sugar. Add eggs and blend. Mix in spices and currants. Gradually add the flour until stiff enough to roll. Bake in 350 degree F. oven. □

Pamela Boersma is the author of "Old-Time Butter Making" in the Harvest 1981 issue of Farmstead. She lives in Ontario, California. Photos by Michael D. Baughn. Sketch by Sherry Maupin.





Mama's Mincemeat

by Florencie Bryant

When I was a little girl growing up on the farm, Mama made lots of mince pies. Mince pie was Pa's very favorite pie of all, and it sure was swell to open one's lunch pail after that two-mile walk through the snow to the country school to find a big slice of Mama's mince pie.

Mama was known far and wide for her good cooking. When threshing day rolled around in the fall, Mama had to only let it be known she needed help. They came on foot, by horseback, in wagons and an old man always came in a T Ford that he had to back up the hill. He was a paper-hanger, so I don't know why he came unless it was just to get some of Mama's cooking.

The little T-Ford, a two-door, sure scared the heck out of everything. It was almost as scary as the big grey threshing machine that put such a panic into my soul. The first time it came up the hill all the chickens hid, and I hid also, under the bed.

Mama canned most of the mincemeat she made and used it during the year. Mincemeat is like plum pudding and Christmas fruit cake; it should be made several weeks before it is required and allowed to ripen or "age".

These mincemeat recipes are all quite different in flavor, but each is delicious. I've won blue ribbons with mince pies at our County Fair.

COOKED CURRANT MINCEMEAT

1 pound seeded raisins
 1 pound suet (chopped)
 1 pound apples (peeled and chopped)
 3/4 pound mixed peel
 1/4 pound blanched almonds (chopped)
 1 pound currants
 1 pound brown sugar
 2 cups apple cider
 1/2 teaspoon mace
 1/2 teaspoon cinnamon
 1 wine glass of brandy



Boil cider until it is reduced to one-half the quantity. Add the raisins, suet, apples, citron, currants and sugar. Cook slowly for one hour. Then add the almonds, spices and brandy. Mix well. Heat until very hot. Store in sterilized glass jars and seal. Use as required. This will keep well for a year or more if stored where it is cool and is less rich than the usual uncooked mincemeat.

FIDDLER'S MINCEMEAT

2 cups finely minced, cooked lean beef
2 cups fresh beef suet (chopped fine)
3 quarts chopped sour apples
2 cups peach jam
1 cup grape or apple jam
2 pints grape juice
3 cups brown sugar
1 pound seedless raisins
1 pound seeded raisins
1 pound currants
1 pound mixed chopped peel
Grated rind of 2 oranges
Grated rind of 2 lemons
1 tablespoon salt
1 tablespoon cinnamon
 $\frac{1}{2}$ teaspoon mace
A few grains of ground cloves

Trim meat and simmer it in a small amount of water until it is tender. Cool. Put into food chopper. Chop all fruits. Mix all ingredients together and simmer and bubble gently for one hour. Then pour into clean glass sterilized jars. This mincemeat has a most rich and unusual flavor.

CHRISTMAS PIE MINCEMEAT

2 pounds lean beef
1 pound beef suet
4 pounds apples
2 pounds currants
1 pound white raisins
2 pounds seeded raisins
 $\frac{1}{2}$ pound citron
6 cups brown sugar
2 teaspoons nutmeg
1 tablespoon allspice
1 tablespoon cinnamon
 $\frac{1}{4}$ teaspoon ginger
1 teaspoon cloves
1 tablespoon salt
2 oranges
4 cups cider or grape juice

Bake beef 40 minutes in moderate oven (350 degrees F.). Now cool and chop. Mix with chopped suet, pared, cored and chopped apples, currants, raisins and citron. Add sugar, spices, juice of two oranges, finely chopped rind of one orange, cider or grape juice. Simmer all together 30 minutes. Pack into hot sterilized jars and process three hours in hot water bath. (Then complete seal.)

FLORENCIE'S OWN GREEN TOMATO MINCEMEAT

$1\frac{1}{2}$ pints tart apples, chopped fine
1 pint chopped green tomatoes
2 teaspoons cinnamon
1 cup chopped suet
1 teaspoon salt
1 teaspoon allspice
1 teaspoon cloves
3 cups white sugar
1 pound raisins
 $\frac{1}{4}$ cup vinegar

Cook mixture until thick. Don't let it burn; Stir often. Can in clean, hot sterilized glass jars. Seal.

MAMA'S MINCEMEAT TURNOVERS

$2\frac{1}{2}$ cups sifted flour
1 $\frac{3}{4}$ teaspoons salt
 $\frac{2}{3}$ cup shortening
1 cup mincemeat

Sift flour and salt together. Cut in shortening. Add cold water to make a stiff dough. Roll out $\frac{1}{2}$ inch thick. Cut into three-inch squares. Place a tablespoon of mincemeat on each square. Fold into triangular shapes and press edges together with tines of a fork. Bake in hot oven (450 degrees) 12 to 15 minutes. (Makes 12 turnovers.)

MINCE AND CUSTARD PIE

Make one pie pastry for bottom of pan.

1 pound mincemeat
 $\frac{2}{3}$ cup sugar
 $1\frac{1}{2}$ cups milk
1 teaspoon vanilla
3 eggs slightly beaten

Line the pie pan with dough. Spread mincemeat over bottom. Add the remaining ingredients to eggs and stir until sugar is dissolved. Pour custard gently over the mincemeat. Bake in hot oven (400 degrees F.) for five minutes. Reduce temperature to 350 degrees F. and bake forty-five minutes longer or until filling is firm. (Makes one pie.) □



Florence Bryant is a frequent contributor to Farmstead and Lives in Little Valley, New York. Illustrations by Carol Varin.



Festival of Light Recipes

by Sandy McLaughlin

Hanukkah (or Chanukah), is a joyous eight-day celebration of the re-building and dedication of a destroyed temple, when Maccabean warriors recaptured it from the Syrians in 165 B.C.

Only enough oil was found to keep the sacred temple lights kindled for one day, but miraculously the lights kept burning for eight days and nights. To commemorate this, an additional candle is lit each night of the holiday and placed with a blessing in the menorah, or candle holder, until all eight candles plus a "lighter" candle are lit.

It is a time for celebrating a religion's survival. Families gather to exchange small gifts each night, to enjoy the traditional Hanukkah fare of latkes or potato pancakes and chocolate "gelt," or coins, and to play a dreidel game where mixed nuts are won or lost, then cracked and enjoyed by all.

LATKES (traditional Hanukkah fare)

2 eggs
3 cups grated potatoes
½ cup grated onion
3 tablespoons flour
1½ teaspoons salt
¼ teaspoon pepper
vegetable oil



Beat eggs until light and foamy. Stir in grated potatoes, onion, flour, salt and pepper until thoroughly blended. Heat about 1/8 to ¼ inch depth of oil in heavy skillet. Drop about ¼ cup potato mixture into the hot oil for each latke. Fry on each side until golden brown. Drain well and serve hot with sour cream or applesauce. Makes 16.

CHEESE KNISHES (a nice appetizer, served warm.)

½ pound butter
one yeast cake
2 tablespoons water
½ tablespoon sugar
4 cups flour
2 eggs
½ cup sour cream
½ teaspoon salt

To make the dough for cheese knishes, melt ½ pound of butter but do not boil. Put one yeast cake in a glass with 2 tablespoons of water and ½ tablespoon of sugar. Let stand until foams. Add to 4 cups of flour. Add 2 eggs, melted butter, ½ cup sour cream, ½ tablespoon of sugar and ½ teaspoon of salt. Mix well. Refrigerate overnight.

FILLING FOR CHEESE KNISHES

3 large onions
4 tablespoons of butter
2 eggs
pinch of salt and pepper
2 pounds of farmers' cheese (cottage cheese can be substituted)

To make the filling, fry three large onions in four tablespoons of butter. Combine the onions, two eggs, a pinch of salt and pepper and two pounds of cheese. Cream well. Melt four tablespoons of butter.

Separate the dough into pieces and roll each piece ¼ inch thick. Brush well with butter, cut into two inch squares. Put one tablespoon of cheese mixture in each square. Fold dough up like a turnover. Bake in a hot, buttered baking pan about 25 minutes in a hot oven.



SWEET CHERRY KUGEL (a dessert noodle pudding)

1 can or jar (17 ounces) dark or light sweet cherries
8 ounces egg noodles cooked and drained
¼ cup butter or margarine
3 eggs
¼ cup sugar
1 cup dairy sour cream
1 tablespoon lemon juice
¼ teaspoon nutmeg
½ cup chopped almonds
¼ cup dry bread crumbs
1 tablespoon melted butter or margarine

Drain and halve the cherries. Reserve syrup. Toss the hot noodles with butter or margarine. Beat together eggs, sugar, sour cream, lemon juice and nutmeg. Combine with noodles and fold in the cherries and almonds. Turn into greased baking dish. Combine dry bread crumbs with one tablespoon melted butter or margarine. Sprinkle over the pudding. Bake at 350 degrees F. for 30 minutes. Serve warm with cherry sauce. Serves 6.

SWEET CHERRY SAUCE

1 tablespoon lemon juice
1 tablespoon cornstarch
Reserved cherry syrup

Combine reserved syrup with lemon juice and cornstarch. Cook until thickened and clear. Serve warm with the kugel. Makes one cup of sauce.

CHEESE BLINTZES

Batter:

2 eggs beaten
1 cup of flour
½ teaspoon salt
1 cup water

Filling:

1 pound cottage or farmer cheese
1 egg
sugar, cinnamon and raisins to taste
pinch of salt

All above is to be mixed together.

For batter, mix beaten eggs with salt and ¼ cup of water. Stir in flour gradually, until smooth. Add rest of water. Grease 6-inch frying pan and heat. Pour barely enough batter in to cover bottom of pan and make very thin crepe-pancake. When edges begin to curl, knock

crepes out of pan. (Do not turn over). Fill with cheese mixture and fold up into rectangle. Fry in butter on both sides until golden brown. Serve hot with sour cream and/or blueberry sauce.

MUNDEL BREAD (an almond flavored goodie)

¼ cup plus 1 tablespoon of oil
¾ cup sugar
3 large eggs
½ teaspoon of almond and ½ teaspoon vanilla extract
2¼ cups sifted flour
1½ teaspoons baking powder
¼ teaspoon salt
½ cup chopped almonds

Beat together eggs and sugar, until thick. Add oil and extracts. Add dry ingredients and nuts. Shape into long rolls on cookie sheet. Bake at 350 degrees F. for 35 minutes. Slice and bake 10 minutes longer.

COCOANUT-ALMOND COOKIES

¼ pound almonds finely chopped
¼ pound shredded cocoanut
4 eggs
½ cup oil
1 cup sugar
2 teaspoons baking powder
1 teaspoon vanilla
flour

Mix all ingredients adding just enough flour to make a stiff dough. Shape into balls 1½ inches in diameter. Arrange on greased baking sheet. Bake in 375 degree F. oven for 12 to 15 minutes.

APPLEKAKA (an easy apple cake)

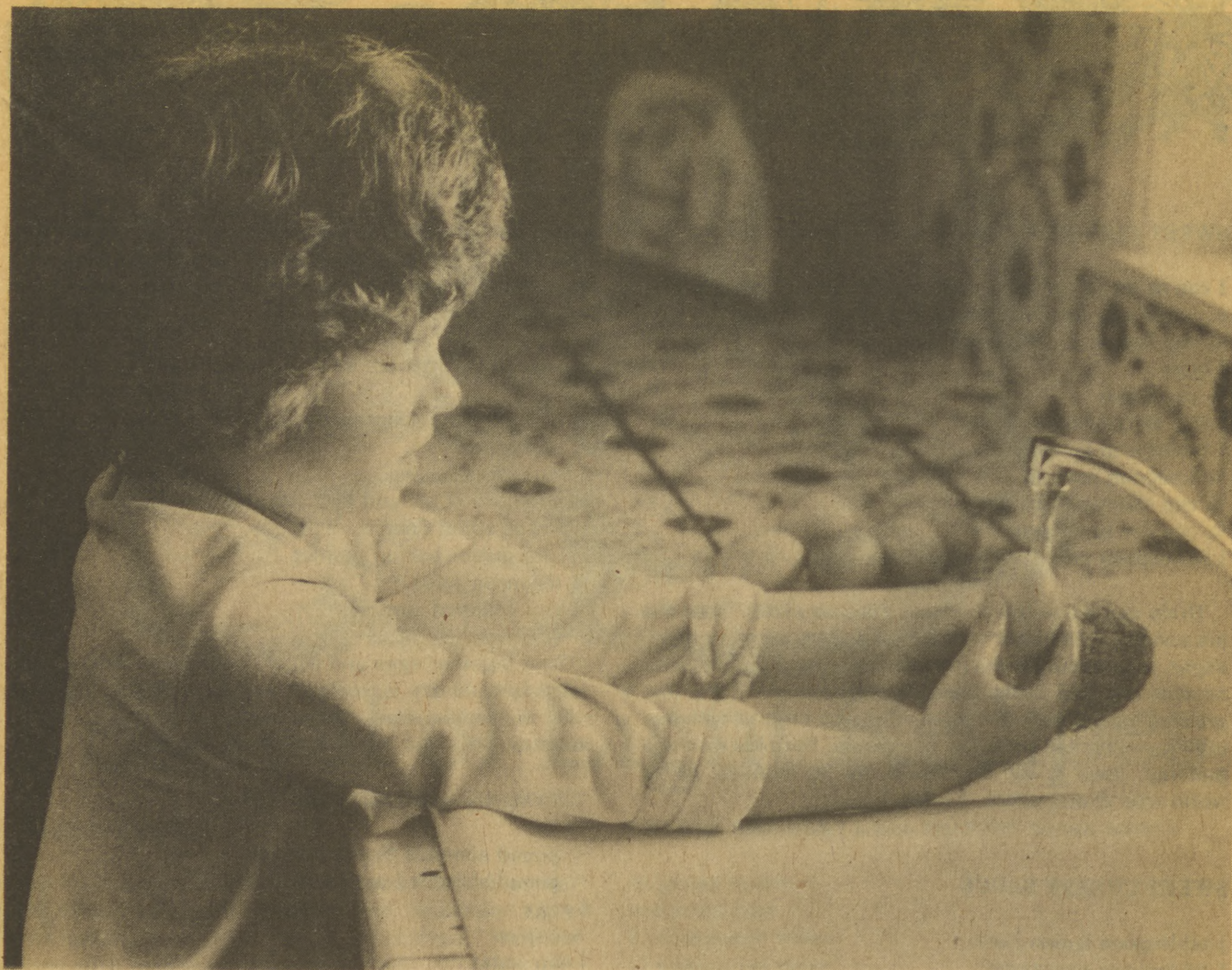
2 cups sifted flour
2 teaspoons baking powder
¼ teaspoon salt
¾ cup milk
4 tablespoons butter or margarine
1 cup sugar
1 egg unbeaten
1 teaspoon vanilla
3 pared apples
cinnamon and sugar

Sift flour, baking powder and salt together. Cream butter and sugar until light. Add egg and beat well. Add flour alternately with milk and vanilla.

Pour into two small greased layer pans. Cut apples into eighths and arrange in rows on batter. Sprinkle with cinnamon and sugar.

Bake at 375 degrees F. for 25 minutes or until done. Top with whipped cream and serve in wedges. □





The author's daughter learns how to scrub the eggs she gathered in the morning.

Raising Chickens Can Be Child's Play

by Lynn Krupa

When our family moved to the country, at first I was not very keen on raising farm animals. With a dog and parakeet already on board, the last thing I wanted, I thought, was more animals to feed. For months, the family's pleas for a flock of chickens fell on deaf ears.

Then my determined seven-year-old formed a conspiracy with her dad. She promised to take care of the animals and had enlisted "good old" Dad to do the heavy work. What could I say? It was especially difficult to nix

the project when a pair of free Bantam chickens mysteriously arrived at our doorstep.

So I relented, but under two very important conditions. First, we would start small and test Molly's interest in raising chickens. If her ardor waned, it would be easier to get rid of two chickens than a whole flock. The second rule was that we would start with a simple goal: getting the hen (one was a rooster) to lay. Molly was told that her job was to provide us with eggs. Raising poultry for meat and breeding baby chickens were not part of the arrangement.

It was probably a good thing that the Bantam hen didn't start laying immediately. As we explained to Molly, the chickens were in a new environment and it would take them awhile to adjust. While she and her dad waited, they read all about chickens and even attended a community college seminar. Molly was the only child there, but I think she picked up a few helpful hints.

Her efforts were finally rewarded about two months after the Bantams came to live with us. Molly was so delighted, you'd think she laid the egg herself! Not long after that, we decided our daughter was ready for a

larger flock. She had been taking good care of her Bantams daily. Until then, we had avoided building a chicken coop because we didn't want to commit ourselves to an activity that Molly might decide to drop. The Bantams did fine loose in the barn, but a larger flock would require a henhouse.

When we were sure Molly was still interested, my husband set to work building a four foot by six foot coop inside the barn. He cut a door in the barn wall, providing access to an outside chicken yard. The plan was to let the chickens run loose as much as possible, so he built the yard small (about 10 feet by 10 feet).

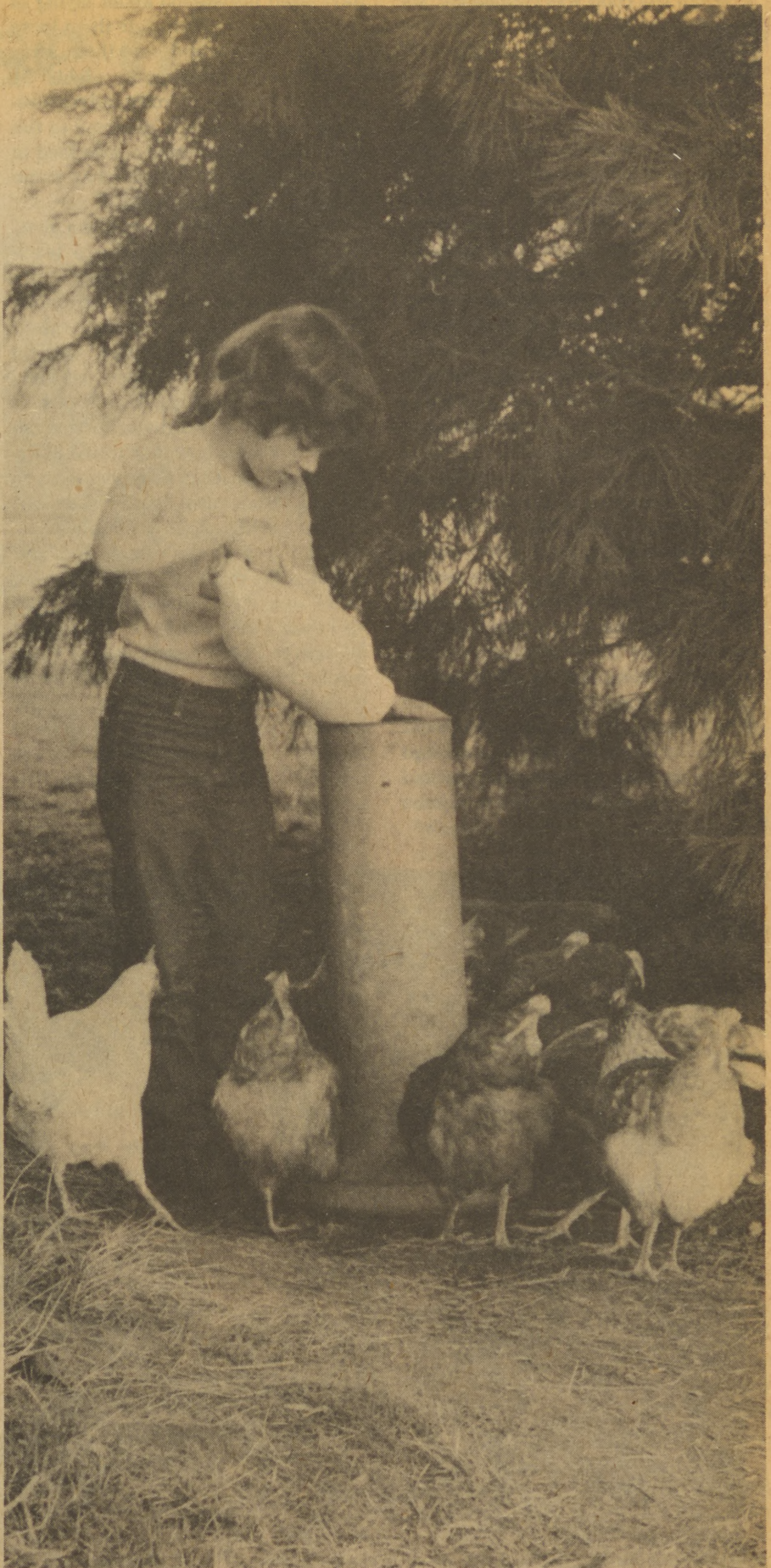
When building a coop that a child must operate, be sure to consult him or her frequently. Can the child open and close the door? Are the nests within reach? Is it easy for the child to feed and water charges?

We found that the metal cylindrical cannisters with a round tray at the bottom worked best for Molly. You'll need two: one for water and one for feed. The cannisters run about \$25 new, but you might be able to find used ones for around \$5.*

We leave both the waterer and feeder in the coop, so Molly isn't required to carry them. When the feed cannister empties, Molly uses a scooper made out of an old bleach bottle to refill it. The feed is stored in a large metal can (to keep the mice out) next to the coop. Scooping feed out of the can, Molly pours it into the feeder until the cylinder is about half full. We found that she can't shake the feed down into the tray below if the cylinder is too full. If it's half full, however, she can manage. With the waterer, Molly has recruited her dad to refill it weekly, all she has to do is turn the cannister daily to allow water to fall into the tray.

As far as cleaning the coop, arrangements were made before the chickens arrived that Dad would be responsible. Maybe some seven-year-olds can clean a dirty coop, but we decided that feeding the chickens and bringing in the eggs were big enough chores. Whatever you decide, make the decision early so there isn't any squabbling about who does what.

*See: *Farmstead*, Early Summer 1980 "Eric Wiggin's No-Waste Poultry Feeder." (Simple plans for a home-made feeder.)



Molly Krupa pours chicken feed into her easy-to-handle feeder.

When the coop was completed, we bought ten Rhode Island Reds and Molly's egg production jumped dramatically. To keep her motivated, we decided to pay her 50 cents a dozen. With older children, you could reward them with the profits after expenses. But we decided it would be easier for Molly to understand the value of her efforts if she received an immediate reward. Each time she brings in an egg, she places a mark on a piece of paper taped to the refrigerator door. Twelve marks earn her 50 cents. If the chickens are laying more than we can eat, she is allowed to peddle them to the neighbors for 70 cents. Selling to the neighbors is more work, but she earns an extra 20 cents.

We found that paying Molly for each egg encourages her to take good care of her chickens. We make it very clear to her that healthy happy chickens lay more eggs. We stress that a dirty egg diminishes its value, so Molly scrubs it and runs it under hot water in a plastic container before the egg is ready for the refrigerator.

Other chores for Molly include taking the kitchen garbage out for the chickens to eat and seeing that the flock is safely tucked in the coop at night. Our chickens

have been fairly good about laying in the morning, so Molly lets them loose in the afternoon and puts them away when she feeds them at night. By nightfall, even the most adventure-some hen has usually returned to the coop. If not, Molly uses a little feed to coax them home. Usually they come running at the mere sight of her.

Helping a child raise chickens gives parents a good opportunity to teach about kindness to animals and at the same time stress the difference between a pet and an animal raised for food. Children should not be allowed to chase or tease chickens "just for the fun of it." If your own or visiting children get the urge to make chase, ask them how they would like it if a chicken as large as a person were chasing them. Also, caution them not to squeeze the hens too tightly, as they may crush an egg inside and threaten the chicken's life. One thing kids love to do is throw chickens in the air to see if they will fly. I suppose it's all right to let them do it once or twice (preferably with a rooster) to satisfy their curiosity. But if the child persists, you might ask him again if he'd like a big chicken to throw him in the air. That usually settles the problem.

Another problem with farm animals is that they often become pets, especially if you only have a few. Molly became very attached to the Bantam chickens. We imagined her going to pieces every time we had to destroy a nonlaying member of the flock. When the other chickens arrived, we explained that they were dispensable but she could keep the Bantams as pets. She seemed satisfied with the arrangement, and has weathered two natural deaths and two intentional disposals quite well.

It's very important that your child understand why she is raising poultry. In our case, Molly knew from the start that her chickens were supposed to lay eggs, not just eat costly feed. She thinks raising chickens is fun (and it should be), but she also knows it's a job. And with 20 feathered fowl now under her command, it's very hard for her to get attached to any one of them. And most of all, she has learned to take pride and joy in her work. □

Lynn Krupa, Molly and Dad and chickens, make their home in Cornelius, Oregon. Photos by the author.



Erica Sluyter [left], Molly Krupa [center], and Stephanie Sluyter [right] handle chickens with love and care.

In Praise of the Fancy



This Black-Tailed Japanese Bantam cock shows the typical short-legged stance, drooping wings and perpendicular tail which distinguish this breed. Other color varieties include White, Black, Gray and Mottled.

by Lee Crawley

The other night my daughter and I sat in the company of a group of people who were about as diverse in age, background and occupation as nature will allow. But they all had one thing in common. It's something of an obsession, and it's called, "The Fancy."

To those who believe that investment should be made with profit as its goal, who find that the rewards of work are totalled in dollars or in the acquisition or production of monetar-

ily. valuable things, and whose concept of agriculture is based on the philosophy of "the greatest possible yield per unit of sustenance," the Fancy is pure frivolity. It is, indeed, a hobby: a hobby which may or may not make small monetary returns on the initial--and unending--investment. It is a hobby often begun in childhood but which, once begun, is seldom abandoned, at least not forever. One of the men in that room the other night began it in his boyhood, and today, at age 73, he describes himself as "about 90 percent feathers."

Feathers? Yes! For the Fancy is the breeding and rearing of poultry. Yes, it has to do with raising chickens, ducks, geese and turkeys, as well as pigeons, guinea fowl, pheasants and swans. No, it is not very concerned with the production of eggs or meat, as such. There is, to be sure, a non-commercial interest in egg production, but much of the attention focused on that product is more concerned with hatchability than with the current market-egg prices. And while the characteristics of body size, shape and quality of bone and flesh are important, of equally great interest are the shape, color and texture of feathers, combs, and other physical appurtenances of the birds.

These folks are breeding for qualities which please the eye, not just the palate and while culls may be eaten in an almost religious attempt to keep only the finest specimens alive, these folks would no more eat a show bird than a connoisseur of rare Oriental art would eat his daily porridge from an antique celadon bowl.

Why should people want to raise animals which are so eminently suited to providing human nourishment, just to look at? Personally, I believe it is done from a sense of poetry. Call it what you will, there is within every human being a desire for the beautiful, the desire to obtain and maintain that which is as uniquely perfect an example of its kind as can be achieved. Why should a rare old book, dingy and difficult to read, be preferred over a modern paperback reprint, which is so much cheaper, more readable, and much easier to carry in the pocket? The book is valuable not simply because it is old or rare, but because it is more pleasing to the inner sense of beauty which longs for something finer than its contemporary, mass-produced, "functional" counterpart.

As it is with man-made things, so it goes with the things of nature. If the quest for the most exquisite rose or the perfect orchid can be pursued with such fervent ardor, why not the perfect Archangel pigeon or the finest Silver Spangled Hamburg chicken?



The sprightly Silver Sebright is one of the smallest of the bantams. Sebrights also come in a Golden color variety.

For that is what the fancier does. He, or she, spends years--a lifetime, perhaps--breeding and rearing birds in an attempt to develop that most elusive of creatures, The Perfect Specimen. Says one fancier who has been at the job for perhaps forty years, "There has never been a perfect bird." The goal may be unobtainable, but the search goes on.

There is more purpose to the Fancy than this, however. Dr. George Arscott, head of the Poultry Science Department at Oregon State University, recently opened an address to a group of fanciers with the statement, "You people are providing a great service, by protecting a gene pool that is rapidly disappearing." While it is true that many poultry breeds are now nearing extinction and are preserved mainly for their uniqueness and delight to the eye, these breeds were originally developed for very specific functional reasons. Some had better laying qualities, or desirable qualities to the egg or meat; some were dual-purpose, good layers and good meat birds and thus important to the home flock where versatility is a plus. Some were prized for their suitability to certain climates, some for their winter-laying tendencies and others for their temperaments, brooding capabilities and so forth. Many of these original breeds were crossed to create the high-production birds which are raised for commercial

purposes today. Should it become necessary to return to the original stock to regain vigor or to develop new adaptations for either production or environment, it is essential that a viable gene pool still be available. Recent experiments, for example, have been undertaken with the objective of developing a "miniature" Leghorn which will lay a standard

sized egg and retain the high production levels of the Leghorn, while requiring less feed because of the smaller size of the bird. The main snag in the program at the moment, however, is that there seems to be a genetic characteristic in the strains being tested that produces soft-shelled eggs. It is this kind of problem which maintenance of a strong gene pool can help to alleviate.

There are any number of organizations which cater to the interests of fanciers: The American Poultry Association, the American Bantam Association, the Society for the Preservation of Poultry Antiquities, the International Waterfowl Association, and others for pheasants, pigeons game birds and so forth. There are, as well, national organizations for individual breeds, and thousands of local clubs. The national associations establish the standards for each breed, against which all birds are judged and some of them sponsor awards at poultry shows. Poultry shows themselves are the heart of the Fancy, for it is there that the breeders have the opportunity not only to show off the products of their labors, but also see where other breeders' programs have taken them. They can exchange information and buy and sell stock. There are thousands of poultry shows held in the U.S. each year, from the local shows and county and state fairs



Silkie, noted for their fluffy appearance, come in Bantam size only.

to the big national shows. Some of the latter draw an enormous number of entries. The 1980 show of the Society for the Preservation of Poultry Antiquities, held in Columbus Ohio, had upwards of 9,000 entries from all over the U.S. and Canada, and also hosted visitors from other parts of the world, such as Great Britain and the Netherlands.

By the early 19th Century, a number of distinct poultry types had developed in Great Britain. Many communities were more or less isolated from their neighbors, and a certain amount of selective breeding as well as intensive inbreeding of available poultry in each given area resulted in functional, as well as distinctive physical characteristics; which means that separate "breeds" had been developed. There was a brisk trade in hens and eggs in the town markets and pronounced interest in showing birds in the local country fairs. And while the major thrust of interest amongst the peasantry was toward the table uses of the bird, there were already many efforts to draw up standards of physical characteristics which appealed as much to the eye as to utility.

The early 19th Century was a period of frantic trade between Europe and Asia and as ships had done for thousands of years, the British vessels picked up fowls at various stops along the way to provide fresh meat and eggs on their voyages. The surplus birds were sold when the ships made home port and in this way many new breeds were introduced. It became political to offer anything really unusual or beautiful as a gift to the Queen and in this manner Victoria acquired, in 1843, some feather-legged, large-bodied birds from China which were then called "Shanghai Fowl." There is some difference of opinion amongst historians as to how many of these birds Victoria initially acquired, but all are in accord that it was this incident which precipitated the events which lead to the development of the Fancy as we know it today.

In 1845, the London Zoo organized and held the first serious poultry show in Great Britain. In 1846, Victoria exhibited her "Shanghai Fowl," or their offspring, at the Royal Dublin Society's Show. Needless to say, her exhibit won the Gold Medal. These birds have come to be known as the "Cochin" breed. The birds caused a

tremendous stir because of their size, their unusually appealing physical characteristics and their docile dispositions. The rush was on to acquire and breed the new Asiatic strains.

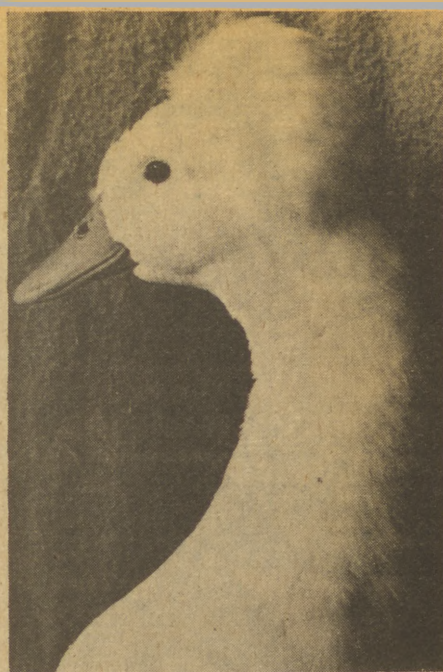
There was more to this "revolution," however. The aristocracy was alert to Victoria's interest and soon no lord or lady was satisfied until he or she had a collection of fancy fowls to display. This became such a fad that enormous prices were charged for show and breeding specimens. The peasantry could, of course, not hope to compete with wealthy aristocrats in raising the fancy stock, but were not about to give up their own intense pleasure in breeding and showing birds. So it soon developed that shows were split into two sections; one for the utility and table fowl, the other for the Fancy.

Meanwhile, a similar interest in poultry had developed in America. It did not take long for word and even specimens, of the Asiatic fowls to reach the U.S., and at the first Boston show in 1849 the big birds caused a furor equal to that which had occurred in Great Britain. So much attention focused on this show that the great Daniel Webster put in a politically-motivated appearance. The interest in the "Cochins" spread as rapidly as it had across the Atlantic, leading one poultry authority, S.H. Lewer, to comment, "...the Cochin...is the father of the poultry fancy...."

The rampant interest continued unabated, reaching its heyday in the first decade of the 20th Century, until it was somewhat curtailed by the privations of WWI. The Second World War brought setbacks from which the Fancy has never quite been able to recover, simply for economic reasons. But there are still those thousands upon thousands of fanciers who are able to maintain a few breeds or varieties, who attempt to keep the wonderful diversity of poultry breeds alive.

An unfortunate number of breeds of all poultry species now face extinction. One organization, the Society for the Preservation of Poultry Antiquities (S.P.P.A.), has been formed in an attempt to preserve and promote interest in the endangered varieties. Members often advertise stock and are usually willing to provide information about breeds in which they specialize.

There is enough variety in these breeds to please any disposition.



White Crested Duck, referred to by one young fancier as a "Diller Duck."

Chickens, standard and bantam, come booted and bearded, speckled and spangled, crested and colored in amazing variety. If pigeons take your fancy, seek out the mysterious indigo Archangels; the Hooded Nuns; the Rollers and Tumblers named for their antics; the Pouter, slender until agitated, when it blows up like a puffer-fish; the huge Runts and the diminutive Owls. The Indian Runner duck might look like a wine-bottle on feet, but it can outlay most chickens and is an excellent forager. Or, look at the charm of the Black Cayuga duck, its iridescent feathers reflecting metallic sheens of midnight colors. And, if it's sheer, unadulterated gaudiness you seek, look not to the exotic birds of the tropics, but rather to the Lady Amhurst pheasant: regal and endowed with all the colors which were left out when the rainbow was made.

It would be a sad world if all this color and diversity were to disappear, leaving us only with broad-breasted turkeys, production Leghorn strains, and the fast-growing broiler/fryer crosses of Rock-and-Cornish ancestry. The poultry organizations, their publications, the poultry shows and the fanciers themselves work to hold onto the diverse breeds which might otherwise disappear. It is a satisfaction in the present and a great gift to the future. □

**Lee Crawley is a poultry fancier and lives in Eugene, Oregon.
Photos by the author.**



This Saxon Fairy Blue Spangled Swallow pigeon sports astonishingly long leg feathers, along with its lovely markings.

Official SPPA Critical List for 1981:

White Chanteclers
Partridge Chanteclers
LaFleche
White Dorkings
Colored Dorkings
Redcaps
Rhode Island Whites
Black Leghorns
Columbian Leghorns
Rose Comb White Minorcas
Rose Comb Black Minorcas
Blue Plymouth Rocks
Mottled Javas
Black Javas
Lamonas
Barred Hollands
White Hollands
Delawares
Buff Cornish
Blue Orpingtons
Red Sussex
Light Sussex
White Houdans
Crevecours
Large Modern and Old English
Barnvelders

Black Tailed Red Leghorns
Red Leghorns
Jersey Buff Turkeys
Blue Muscovy Ducks
Crested Roman Geese
Buff Rock
Rose Comb Rhode Island White
White Orpington
Rose Comb Black Leghorn
White Hamburg
Black Hamburg
Golden Pencilled Hamburg
Sultan

Bantams:

Rhode Island Whites
Buff Columbian Wyandottes
Dominiques
Blue Wyandottes
Chanteclers
Birchen Cochins
Silver Pencilled Cochins
Red Cochins
Red Leghorns
White Faced Black Spanish

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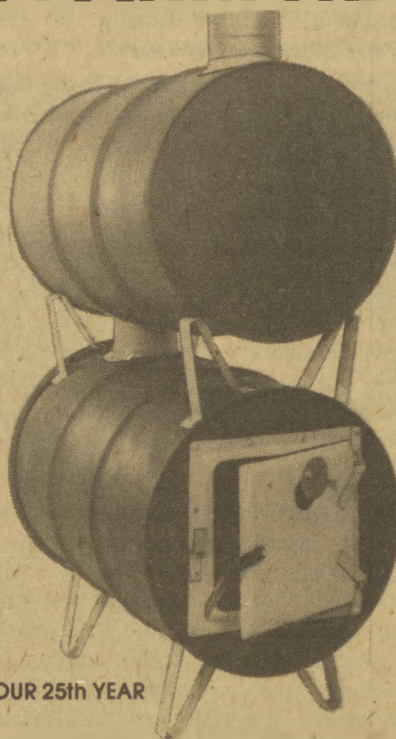
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The Silver Spangled Hamburg

A fine and feisty bird.

by Jan Willems

A real poultry buff likes almost any of his special breeds for one reason or another, and to write an ode to a particular "fancy" may seem very arbitrary indeed. The English author, Ray Feltwell, in his excellent book—*Small-Scale Poultry Keeping* mentions 72 pure-breds, most of them well-known birds. The official "critical list" of the S.P.P.A. (Society for the Preservation of Poultry Antiquities), has 42 breeds or varieties, each of which has its admirers and devoted fans. As a young boy in Holland about 50 years ago, I went to the poultry shows or visited farms where quite a few old fashioned birds were still freely foraging around. And, remembering the various breeds or varieties I have kept myself since then, it is no problem for me to name off-hand at least a dozen of specially liked birds.

But in my opinion, the Silver Spangled Hamburg gets the honors. It is the best known of the Hamburg breed of which there are four varieties. I have had both the standard and bantam size, and in fact, my one remaining three-year old little bantam rooster is still the poultry boss of my yard. "Shorty" is like a bossy small town fire marshall who always officiates and keeps abreast of whatever happens.

First of all, the name "Hamburg" is partly misleading as it suggests a bird of German origin. It is definitely from Holland, as the former well-known international judge and poultry expert, Van Gink, mentions. But it was, like so many breeds, further developed by the always very skillful English breeders. It is an old breed, already pictured and mentioned in the 17th century, and was mainly developed as a lightweight (four to five pounds) egg-producer. In England it used to be called the "Dutch Everyday Layer" as it produces plenty of good, medium size white eggs on a minimum of grain feed and a maximum of foraging around.

It is not a bird to keep in a small pen. It can only be fully appreciated in its strikingly black and white pattern, rapidly moving around on the free range. Indeed they look perky and pretty at the same time, with the clear contrast of almost polka-dotted feathers and their bright red rosecomb cap covering an alert head with the big white ear lobe. The hens, which have relatively more black spangles, look like neatly but demurely dressed ladies in black and white, scurrying to church. The roosters carry a



A regal Silver Spangled Hamburg cock.

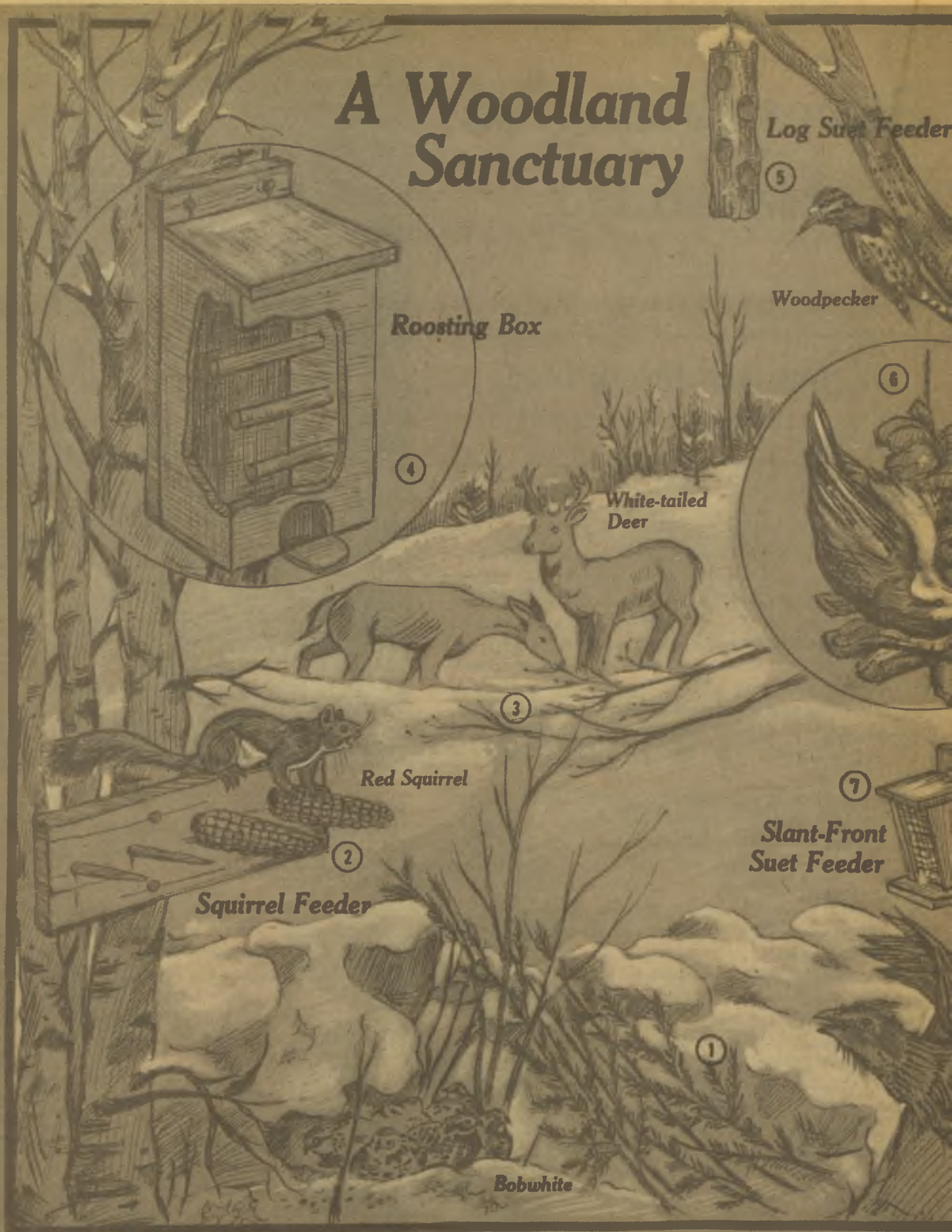
bit more white, and with the black spots at the end of their long sickle feathers, are always clearly visible and seemingly in a hurry.

"Feisty characters" I call them. Never afraid of a fight. My big Brahma rooster, two heavy Australorp males and a big Barred Rock rooster all know that it's time to run for their lives whenever little Mr. Hamburg thinks there is something, or someone (a hen) to fight about. Mind you, that is only among the birds. Towards humans they are not shy at all, but are nonetheless very gentle birds.

Where to get them? The big poultry breeders like Stromberg and Murry McMurry carry them in their catalogs. "Poultry Press" has them in its classified ads. You can ask the Secretary of your regional, or local poultry club for a reliable breeder not too far from where you live, or visit a poultry show and get in touch with a fancier of this fascinating breed. Once you have a pair or trio you can start your own breeding program. I found them to be good sitters, who usually have their clutch of eggs well hidden. And they are good, alert brooders. □

Jan Willems, a retired economist, is Farmsteads' resident poultry expert and he has contributed many fine articles on small livestock including: "How to Raise Turkeys," Holiday 1979. He lives with his wife Gerry on their homestead on Mount Desert Island. Photo: Lee Crawley.

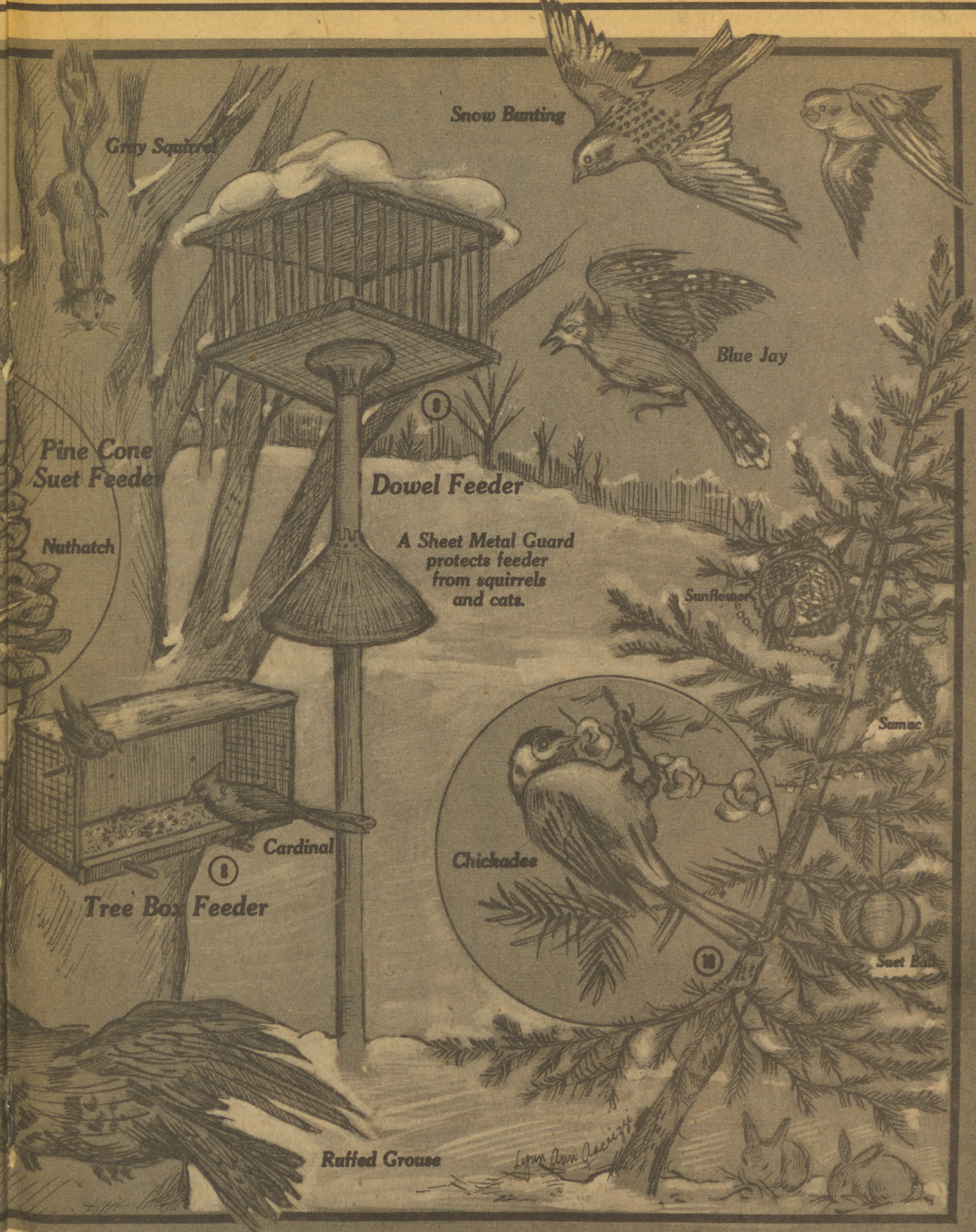
A Woodland Sanctuary



When snow blankets fields and trees, you can provide feeders and simple shelters to help wildlife.

1. To attract quail, pheasant and grouse, build a lean-to near their habitat. Cover the structure with a thatching of pine boughs or cornstalks and scatter grain underneath.
2. Make a squirrel feeder by embedding ears of corn on spike nails. Squirrels tend to eat only the germ of the kernel, so the remainder drops to the ground as forage for birds.

3. Hardwood saplings or shrubs crowding good growth can be culled and left atop the snow so deer can reach buds and twigs.
4. A roosting box with dowel rod perches and a hinge bottom for cleaning provides cavity-nesting birds shelter against severe weather. Waterproof boxes and stagger inside perches so one bird does not rest directly above another. Place entrance hole in bottom so accumulated body heat is retained in the box.
5. A small log with 1 1/4 inch holes drilled at a downward angle makes a suet feeder. Use sassafras or white ash since the rough



bark affords easy footing and stays well on the sapwood.

6. A large pine cone dipped into melted suet and hung from a branch makes a good swinging feeder. Coat with a peanut butter cornmeal mixture, too.

7. A suet feeder with a slanting front causes suet to rest against $\frac{1}{2}$ -inch hardware cloth, making it available to birds.

8. A wooden tree box with a 2 or 3 inch strip nailed across the lower edge of the opening is an easy-to-build feeder. Place five feet off the ground, facing away from prevailing winds. Tar

paper on the roof makes it more weatherproof.

9. A feeder with dowel rods spaced $1\frac{1}{4}$ -inches apart allows smaller birds to dine without interference from dominant jays, starlings and grosbeaks. Provide other feeders for those species.

10. Old Christmas trees provide cover and travel lanes. Birds relish old popcorn and cranberry strings and other tied-on food such as sumac clusters and dried sunflowers. Dip bough tips in hot suet.

The White-tail

A Year in the Life of a Deer



by Samuel L. Skeen

It is May. As the plow turns the fecund earth, it releases pungent smell of the new-turned soil. A soft warm breeze wafts across the meadow carrying with it a multitude of spring fragrances.

Rising above the steady drone of my mechanical horse is the raucous caw of the sentinel crow warning its mate of my approach. I glance back later and see the crows have returned

to feed upon the white grubs exposed by the plow.

A flash of white in the shadows near the woodland border awakens me from my self-induced trance. I proceed with plowing as though I saw nothing. Had I stopped and dismounted, the deer would have fled for certain. But a man on a machine is regarded differently than a man on foot. The deer has not fled; it stands slightly beyond the edge of the timber. A quick glance and the notice

of one erect and one drooping ear tells me it is the white-tailed doe I have seen on my farm for the past four years. Why her left ear droops has always remained a mystery to me.

The deer clan is scientifically known as *Odocoileus virginianus*. The full name of the subspecies found on my farm would be *Odocoileus virginianus virginianus*. In my neck of the woods we are less formal. We simply call them "the deer."

I know this doe is an immigrant, both to my farm and to this country. Millions of years ago her ancestors wandered to this country across the Asian-American land bridge. I am aware there are some thirty subspecies of her kind on the North American continent. And I know, even though the present and future outlook for her clan is bright, the past once looked dim for the white-tailed deer.

When this century began, the national population of white-tails was at its lowest ebb. Unrestricted shooting and market hunting had reduced the deer herd drastically. Many people predicted the deer would become extinct. But it was not to be.

The birth of this century also marked the beginning of a conservation effort to save the species. Strict new laws and public sympathy enabled the white-tailed deer to begin its comeback. Men trained in the practices of game management and deer biology hastened the process, and today, the white-tail can be found in forty-eight states, their numbers exceeding 13,000,000.

My farm is becoming good deer habitat. When I bought this acreage it had been clean-farmed for years. There was no brush in the fence rows. Woodlands and other areas unsuited for pasture were being grazed. Although it was neat in appearance and a source of pride for the owner, the clean farm offered native wildlife very little in the way of habitat. But underbrush is again common in the woodlot. The cattle are barred entry to areas unsuited for pasture. And best of all for the deer, the farms that border mine have been abandoned. Since this acreage is being reclaimed by nature, a luxuriant growth of brush, shrubs and forbs abound which seems to draw deer like a magnet. I am pleased.

Each trip around the field increases the distance between me and the doe. She becomes a bit bolder. I notice she is in the process of changing from her winter coat of "blue" to her summer "red." Her new coat will be comprised of scant, solid hairs and little underfur.

Like my cattle, deer are also ruminants. They do not have four stomachs; they have a stomach divided into four compartments. The first compartment acts as a large, bacteria filled storage vat for roughly chewed

food. This internal physiology enables the deer to consume large quantities of food in a short time. When the dining is done, the deer can retire to the security of cover, regurgitate its quickly consumed food from the rumen and masticate it further--a natural design for an animal once preyed upon by prowling wolves and big cats.

Unlike her domestic kin, the doe is not a grazer. She is a browser and prefers variety in her food. She will nip a twig from one shrub, take a leaf from another and pause for a taste of skunk cabbage after sampling a mushroom.

Life abounds around and in the doe's body. She is nearing the end of her 200 to 205 day gestation period. She will fawn the latter part of May or early June. While she continues to nourish her unborn, the sire of her fetus is also nourishing a new growth. Spring is antler growing time for the bucks. The antlers are not horns as commonly misnomered. Antlers are shed each year; horns are not. These shed adornments are rarely found because they are consumed by rodents such as mice, which relish the high calcium and phosphorus content.

The once popular presumption that the number of points or tines on the antlers is an indication of the buck's age has been proven false. The antler growth and size is governed by nutrition and genetic background. After his first set of "spikes" or singular tines, it is possible for the buck to be a six or eight pointer at the age of two and a half years. And after he reaches a certain age, the buck may again produce spikes, or if he has survived to become very old, he may have no antlers at all.

Antler development is governed by "photoperiodism" or the day length. The increased amount of daylight stimulates the pituitary gland at the base of the brain to produce the hormone testosterone. From the pedicels on the buck's brow, the growth begins in late April. As the tips grow outward, they are encased

in a membrane highly charged with blood vessels. This gives the emerging antler the appearance of being encased in "velvet." While the buck is in velvet, the antlers are very tender, easily injured and will bleed if cut. The buck is very protective of his adornments and is a bit of a recluse during this time. By autumn, these antlers become his crowning glory and the weapon he needs for his yearly battle.

Fawns

It is June, the month of fawning for most does. Most likely she is still accompanied by her young ones from the previous season. As her time draws near, she will continue to rebuke the yearlings until they are driven away.

The doe's first pregnancy will generally result in the birth of a single fawn. Thereafter, if her nutrition level is maintained through the winter, she will probably bear twins and sometimes triplets. Quadruplets are very rare. If four were born, one of the group would probably be born dead or die soon after birth.

When the moment of delivery arrives, the doe will lie down and rise several times, a body movement that aids her labor. The process of birth may last only a few minutes if a single fawn is being born. Twins would naturally take longer, but the second birth would be less difficult than the first.

Shortly after the fawn enters the world, the doe will give her minutes-old offspring a thorough cleaning by licking it with her tongue. Such a scene is amusing, for the vigorous licking will cause the wobbly-legged baby to tumble. But it doesn't give up. It continues its efforts until it "has its legs."

An hour after birth, the fawn is able to stand, control the legs that seem much too long and begin to walk. The doe allows the fawn to nurse before she leads it away to a location where it will lie hidden. Sporting a tawny red coat with white spots, the hiding fawn resembles the sun dappled forest floor. When danger is near, the fawn lays its head on the ground and flattens its ears to reduce its visual bulk. Aiding the fawn's natural defense system is the fact that it is odorless.

The doe will feed the fawn several times a day but she leaves it when it's



not nursing. This lack of contact is instinctive. When wolves and big cats roamed the deer's habitat, the presence of the mother's scent might expose her young to danger. Although most of the deer's range is no longer occupied by the lobos and pumas, the mother deer knows only what nature has ingrained in her. After the doe feeds the fawns and forces them to hide, she will wander off to feed or chew her cud. Even when she cannot see the hiding place, the doe is always within earshot of the fawns' blatting call.

Potential predators, such as coyotes, dogs and bobcats, aren't the young deer's only problem. When people unfamiliar with the habits of deer find a fawn, they assume it has been lost or abandoned. In most cases the baby's "lost" mother is probably watching the human interlopers from a nearby thicket. With good intentions, these folks "rescue" the fawn, but unless a person has positive proof the doe has been killed, the fawn should not be disturbed. And before any animal is removed from its natural environment, one should consult the local conservation officer. In many states it is illegal to keep a wild animal in captivity without a permit.

Fawns aren't always hidden in the woodlands. Since they can sometimes be found in meadows, I install a flushing bar on my tractor prior to mowing. The seven foot bar consists of a three-fourth inch pipe with dangling lengths of chain spaced about six inches apart. Mounted across the front of the tractor and extending outward, the chains snake through the grass ahead of the mower's path. Animals hiding and birds nesting in the meadow will be roused by the dangling chains. The few minutes spent inspecting the site of a flush to determine if a nest is present is a worthy investment of time. The thousands of game and song bird nests destroyed each year by mowing could be saved if more farmers would use a flushing bar of some type.

With July and August comes the summer heat. No longer odorless, the fawns are now following their mothers to seek shady hillsides in an attempt to escape the onslaught of the sun's parching rays. With mouths agape and tongues exposed, the deer pant rapidly to draw off their body heat.

Their sleek, red summer coat of thin hair aids the process. But the advantage of the thin coat becomes a disadvantage when the deer are attacked by the ubiquitous hordes of biting, blood sucking mosquitoes, midges and deer flies.

By late summer, the fawns are miniature copies of adult deer. When the adolescents mature, they will stand thirty-six to forty inches high at the shoulders with their bellies being eighteen to twenty inches from the ground. It is the bounding gait of the white-tail that makes it appear to be a much taller animal.

When regional differences and the seasonal pelages are discounted, all white-tailed deer are basically alike in coloration. Behind a jet-black nose are two white bands. White hair also encircles the eyes, lines the insides of the ears and makes up a large patch on the animal's throat. The belly, the insides of the legs, the behind and, of course, the underside of the tail are also white. The rest of the deer is brown.

The white-tail's sense of smell is undoubtedly its greatest asset. Its olfactory prowess far exceeds that of any dog. The deer can smell acorns under a blanket of snow, locate apple orchards from afar and detect the presence of man with little effort. Hunters moving about in the white-tails' domain have learned they must attempt to approach a potential hiding spot by heading into the breeze.

A close second to the sense of smell is the white-tail's ability to hear. The deer's ears are constantly on the move. When these radar-like appendages pick up a strange noise, the ears focus toward the origin of the sound in an effort to determine its source. A most appropriate testament to this ability was first noted by the American Indian. "When," as the proverb goes, "A pine needle falls in the forest, the turkey sees it, the bear smells it and the deer hears it."

The weakest link, by comparison, in the deer's defense arsenal is its vision. The deer is color-blind and sees everything in varying shades of gray. But the deer's vision is not poor, it is merely attuned to picking up movements. While it is able to detect the slightest motion, a deer will usually pass over a stationary object that does not look out of place. A

person sitting immobile against a tree would probably attract little attention. A human standing in a deer runway, where no stump stood before, is certain to be avoided. If the deer can't decide, its curiosity may cause it to investigate.

Deer have learned to avoid man in other ways. This once diurnal feeder became nocturnal as humans invaded the deer's habitat. By feeding at night, the white-tail could avoid man and still utilize the same land.

There is much yet to be learned about animal communication. But everyone who studies the deer concludes that both the young and adults can communicate. Fawns bleat like lambs. The adults snort, whistle and stamp their feet. But the most common method of communicating is by flashing the famous white tail. A tail held at half mast indicates the deer is ready for flight. When the flag goes all the way up, it is a signal to all the deer within sight. An erect tail is the danger signal.

The Buck

Summer belongs to the does and fawns; autumn belongs to the buck. He is, once again, a symbol of magnificence. The antlers he has so carefully protected since April have completed their growth by September. A growth of cells at the base of each main beam has cut off the blood supply. The once nourishing network of blood vessels begins to dry and slough away. The buck is losing the velvet covering around the antlers.

Just as the lengthening days of spring stimulated the antler growth, the shortening days of late summer bring it to a halt. The pituitary gland has stimulated the gradual release of the hormone testosterone. The buck is being readied for the mating season or rut. At this time, the buck will begin "shadow boxing" with resilient bushes and saplings. Because the buck starts to make these "rubs" at approximately the same time the velvet dries it created the once popular theory that the drying velvet was itchy. The current school of thought contends the buck is actually conducting mock battles for the impending rut. Adding further credence to this theory is the fact that a number of bucks have been seen with dried velvet hanging from their antlers and yet showed no signs of discomfort.



The October change in the buck's appearance is a thickening of the neck caused by increased blood flow and the development of the muscles needed for battle. When bucks fight for the favors of a doe, it is a shoving match rather than a series of head-long charges. The two combatants square off, put their heads together, mesh antlers and begin pushing. Each tries to throw the other off-balance or get through his opponent's guard. Such bouts are rarely fights to the finish. The purpose of the battle is to establish dominance, allowing the stronger buck to pass on his desirable genes. The loser of such a battle usually flees the scene intact, and the winner seems content to let him depart, following a short chase.

There are times however, the fight may bring death to one or both of the battlers. One buck may be gored or disemboweled by his opponent. The other possibility, although rare, is that the bucks will not be able to separate because the antlers have

interlocked. When this happens, both will perish by starvation.

By November, the rut is at its peak. Since he is ready for mating before the does, the buck is constantly on the move in search of a mate. During this period, he eats very little. His sexual rage also makes him less wary and seen more frequently. Because he is constantly roving, the incidence of road killed bucks increases during the rut.

When the buck is in rut, he will leave several calling cards for the does. He paws up patches on the forest floor. Once the ground is cleared of all debris, the buck will leave his scent by urinating in the "scrape." In his search for receptive does, the sexually active buck will make several scrapes. At the height of the rut, he will check his calling cards several times a day.

Does in heat will linger near the scrape or urinate in it before they move on. When the buck checks the scrape, he picks up the doe's scent and trails her. The buck will stay with

the doe until they have mated and she will no longer stand for him. He then resumes his search for another receptive doe. By the middle of December the rut is generally over. In a matter of weeks, the bucks will begin shedding their antlers.

Since the male white-tail is polygamous and capable of servicing several does, he can be hunted without affecting the growth and expansion of the deer herd. However, when the size of the herd nears the carrying capacity of the habitat, an antlerless season must be instituted. While many people still oppose the idea of such a season, the logic for such a hunt is simple and natural.

Nature works on a system of checks and balances. In a natural setting, predators keep the populations of prey animals in check. But man has altered this system. Throughout most of its range, the deer has no major predator. Man must now assume that role if the deer herd is to remain healthy. And as long as the herd is

kept in check, this status benefits both the deer and its habitat. Left unchecked, the deer would literally eat itself out of house and home. With the habitat damaged and more deer being born each year, the winter range could not support the deer and many would starve. The white-tailed deer must be hunted.

The rut wasn't the only change that took place in the deer's life cycle during autumn. All the deer experienced an outward and inward change. The winter pelage consists of gray to slate blue hair that is long and dense. Each hair is crinkled and hollow. Beneath the hair and next to the skin, a fine undercoat of fur will curl around the hairs. The deer can make this hair stand on end, similar to a bird ruffling its feathers. So effective is this insulation that snow falling on the back of a deer will accumulate as long as the hair is standing on end.

The internal change brought about by autumn is less visible. The deer are building their fat reserves for winter. Their favorite fall food of acorns is rapidly converted to fat and stored over the back and hips, outside the ribs, around the kidneys and on the brisket. Without this reserve, some deer would not make it through the winter. Even with the stored fat, some will still perish if the habitat is insufficient to support them.

Winter is the grim season for deer. The deer, in seeking a refuge from the

biting cold, look for the protection afforded by the cedar swamps and dense stands of conifers. In doing so, the deer restricts its habitat to about one-tenth of its normal range. This concentrated gathering of deer is known as "yarding".

In years of light snowfall, the deer will not suffer greatly. They will tramp out a network of trails and leave the yard to feed. But heavy snows immobilize the deer by confining them to the yard. As the snow deepens, the competition for an already limited amount of food will become greater.

Fawns are the first to feel the pinch. Since they are the smallest deer in the yard, less browse is available to them. They are dominated by the larger animals. A doe will even bully her fawn. There is no love in the deer yard. And if a fawn becomes too weak to follow its mother to feed, it will be abandoned and left to die.

The yarded deer of March show distinctive signs of malnutrition. The stores of its body fat were depleted long ago. The once rich, creamy-white marrow of the bone grows red and gelatinous as the last fat reserve is tapped. Even the long winter hair no longer conceals the white-tails' pitiful condition. Their hip bones become visible, their flanks appear hollow and they stand with their backs bowed. The bright eyes of summer and fall

have become dull. Some will still perish; the fortunate will survive.

April brings relief to the beleaguered deer. Warmth, along with the frequent showers of life-giving rain, generate a new growth of green throughout the deer range. Succulent buds now unfold on the tips of branches. Food once hidden by a natural blanket of refrigeration is again available to nourish the winter weary deer.

Soon the deer will hear the sound of man's mechanical horse. They too will smell the pungent odor of the newly turned soil and hear the raucous caw of the sentinel crow warning its feeding mate of a human's approach. Curiosity may cause the deer to investigate the familiar drone of the tractor. They will watch from the edge of the forest. And when people draw too near, the deer will flash their famous white-tailed trademarks and disappear into the shadows. The one with the drooping ear may linger. □

Sam Skeen enjoys researching and writing about wildlife in Ripley, West Virginia. Art by Lynn Ann Ascriczzi.



A fawn's spotted coat resembles the dappled forest floor.

Tanning Buckskin



by Rosanne Kramnicz

For many of us the fall hunting season adds an important supplement to the garden harvest. When the hunt is successful and a great animal gives up its life for my survival, I feel that it's my duty to utilize every part of it.

Tools

To work successfully on this project, you will need:

(1.) A 4 or 5 gallon barrel or earthenware container (I used my 16 quart porcelain canning pot). Any watertight vessel will work as long as

it is not metallic (the lye created by the ash solution will attack metal).

(2.) Four, one by four inch boards, approximately four feet long.

(3.) A sharp kitchen or carving knife for fleshing. A special fleshing tool can be ordered from any taxidermy outfit, with prices ranging from \$15.00 to \$40.00. Or, you can make an effective fleshing tool by cutting a scythe blade down to a comfortable size (6 to 8 inches) and attaching a handle to either end.

The first step in preparing the skin is to flesh it. Since clinging pieces of

flesh will prevent proper penetration of the tanning solution, this is the process by which the excess fat is removed. To flesh your hide, lay the skin, hair side down, on a rounded beam. Any rounded log or board will work or you can make a fleshing beam by rounding a one by six, or two by six inch board and anchoring it up at an angle of about 45 degrees. When fleshing, lay the skin with the tail toward you and push the knife from the tail end toward the head end of the hide--otherwise you may tear the skin. It's a good idea to do this work

standing, and also to work in your cellar, garage or barn since there will be much debris. You should remove all the flesh, fat and blood from the skin.

After the hide has been fleshed, pour salt over the fleshed side (five pounds for one deer hide is not too much), and leave it under the salt for at least five days. The skin can be kept salted for up to three months if the temperature is constantly below freezing. However, you need a minimum of five days in which the briny hide has been submitted to temperatures of over 50 degrees before you should proceed with the next step--removing the fine membrane that clings to the flesh side of the skin.

Right next to the skin you will find the membrane--a very thin, transparent skin. This has to come off. In order to get a good tan you have to get right down to the skin, so don't try to go any farther without removing it.

With a small skin, like a rabbit, the membrane can be peeled off by simply pulling with your hands. With the larger deer skin you will need your knife, strong hands and a lot of patience. You can either lay your skin on the fleshing beam or stabilize it by stretching the hide out on a frame made with the four boards mentioned in the section on tools. Nail the four boards together in the form of a rectangle (the dimensions depend upon the size of your hide). Carefully nail your hide to the frame--roofing nails have wide heads and work well for this. Again, as you remove the membrane, work from the tail towards the head.

After the membrane has been removed, wash the hide well. Since my Northern Minnesota home was still hitting 20 degree below zero temperatures, I found that the hide laid over my 16 quart pot, under the shower, worked well for washing.

If you have decided to do a small skin, such as rabbit, I suggest leaving the hair on. Rabbit skins are very thin and are fairly useless with the hair removed. In the case that you elect to leave the hair intact, you will want to use the alum method.

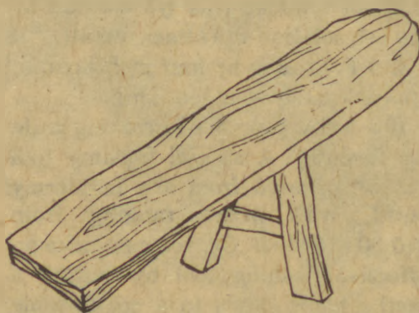
Alum Tanning

The alum-tan can be used for both heavy and light hides. Be aware, though, that it demands considerable "breaking up" since alum has a tendency to contract and stiffen the skin.

Clean out your container and pour your tanning solution into it. To make the brew, stir one-quarter pound of powdered alum and one-quarter pound of salt into one gallon of water. Alum can be ordered from any taxidermy shop for around \$.75 per pound or purchased at a pharmacy at a rate of around \$2.39 per pound (remember you only need 4 ounces for the deer hide, which brings even the pharmacy cost down to only \$.60). Plunge your hide into the liquid, making sure that all parts are submerged. Weight down if necessary.



My life, on a Chippewa Indian reservation, gave me the opportunity to absorb a lot of culture. My native American friends told me that a tanning solution can also be made by using oak bark. Two types of oak bark are used--chestnut and white oak. They are easy to recognize because they both bear acorns. Use of the chestnut oak bark will give the hide a brownish color when finished while the white oak will give it the whitish color of the alum tan. To make the tanning solution, go out in the spring when the sap is up and collect a sack full of fresh bark (it can be later used



A fleshing beam can be made by rounding the edge of a wide board and anchoring it up at a 45 degree angle.

dry if necessary). This unfortunately means stripping the tree, which leaves it open to disease. A better idea is to find an area where oak is being cut by loggers. And, as long as you don't get in their way they should have plenty of bark for you to strip. Bring your treasure home and chop it into tiny pieces. Then mash the pieces with a hammer to release the sap from the fibers. Place the pieces in a vat and stir in enough water to cover the chips. Immerse your hide and proceed as with the alum tan. The only difference is that with the oak bark it may take a couple of months before the hide is totally tanned.

After about a week the hide should be removed and checked to make sure all fleshing is complete. The fleshing knife will take hold easily at this stage. And, any flesh and membrane not removed earlier absolutely must be removed now. It is also the time to work out any hard spots in the hide, in order to give the tanning solution good penetration. For best results, stir the tanning water daily. Wait another week and test to see if it's done. To do this cut off a small piece of the hide and put it in boiling water for a minute or so. If it remains soft, it's tanned. If it gets hard and bony, it needs to soak longer.

Removing the Hair

A strong lime or lye solution is the most common down-home method to remove hair from a hide. And, although a furry hide is more beautiful to look at, a de-furred hide is much more useful.

After the hide is scraped free of flesh and washed free of salt and blood, the wet hide should be rubbed with a liberal amount of hardwood ashes. Work the ash in well to insure that it reaches the base of all the follicles. The hair should then be wet down (make sure not to wash the ash off), rolled up and placed in your crock containing a pasty mixture of one shovelful of good hardwood ash to one gallon of water. If necessary, weight down the hide with a plate and a rock to keep it saturated. The amount of time it takes before the hair will pull free depends upon the thickness of the hide and the temperature. Between 60 and 75 degrees allows the ash-lye to work best. If the temperature is below that, however, it simply takes longer, so there's no need to fret. After the hide sits for about five days, test a portion of it by



If the hide is ready, the hairs will pull off easily. Always wear rubber gloves since the wood and ashes solution used to loosen the hair is slightly caustic.



To remove the transparent membrane next to the skin, you can stretch out the hide on a frame made with four boards.

attempting to pull the hair free. Use rubber gloves since the lye created by the ashes and water is slightly caustic. If it is ready, the hairs will come off quite readily. Nevertheless, the edges of the hide are tougher and may require some scraping to free the hairs. It can take anywhere from five days to three weeks to complete this stage, and the job of scalping is weary enough without making it more difficult by attempting it too soon.

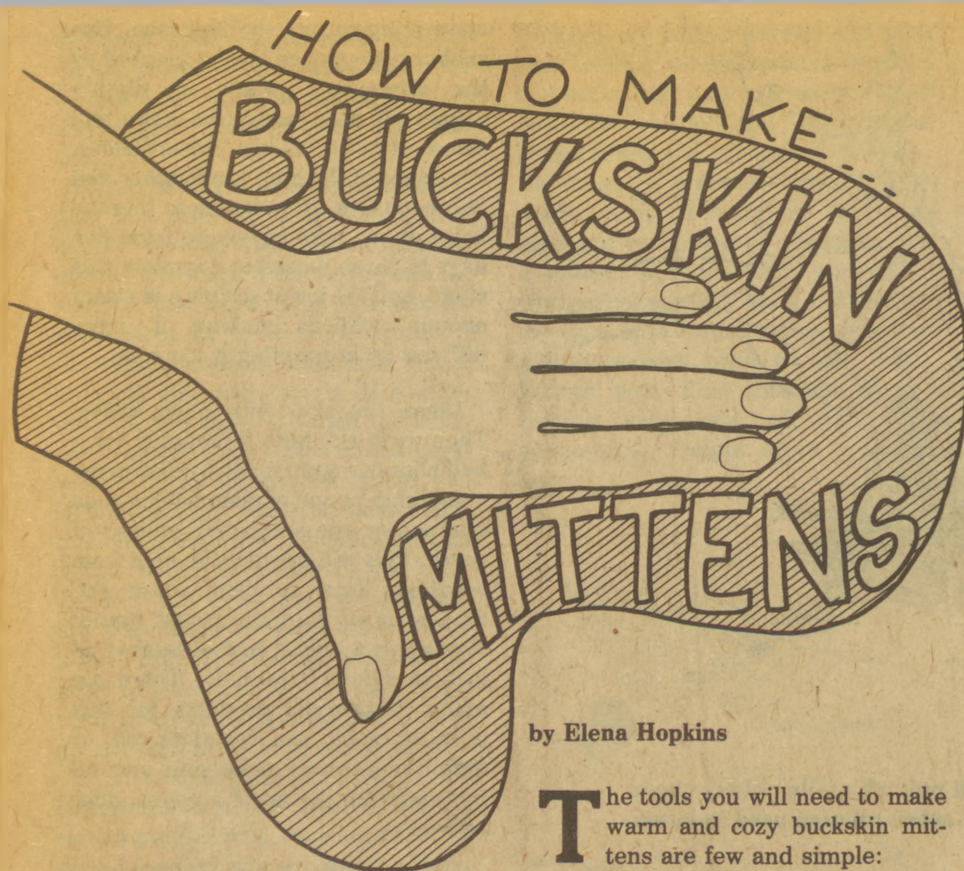
Clean the skin with plain water. Then wash the hide thoroughly for a half hour in a soup made by dissolving one-eighth pound of plain baking soda into one or one and a half gallons of water. This will prevent the hide from cracking. Rinse in plain water and then hang up to drain excess liquid. Now apply a liberal coat of leather oil to both sides of the hide. There are many commercial products for this purpose such as Neatsfoot oil or Softol, or you can make your own oil by rendering the fat of a goose, duck or bear.

After it has been oiled, fold the hide over itself a couple of times and put it in your pot to sit over-night. Now take the hide and hang it somewhere shady. After about 12 hours, check to see if it has begun drying (it may take a couple of days). If it shows any sign of drying or stiffening, start breaking up the leather immediately. Anything you do is legal at this point. You can work the leather over your fleshing beam or any other round object. You can pull on it, chew it or push it back and forth over the rounded edge of a kitchen chair, as I did. The more you do right now, the softer your leather will be. This takes a lot of time and some sore hand muscles. But don't skimp or you will end up with a product that is stiff and disappointing. Once the leather has started to dry out, it will do so rapidly, so continue working on the drying areas until the whole thing is soft and pliable.

Don't let the fact that it takes a lot of time and work to home-tan a large hide scare you. The moccasins on my feet, the wrist band on my watch and the laces in my hiking boots are only a few of the things which have proved, to me, the worth of all that effort. □

Rosanne Kramnicz lives resourcefully and writes in Renton, Washington.

Art by Catherine Frey.



by Elena Hopkins

The tools you will need to make warm and cozy buckskin mittens are few and simple:

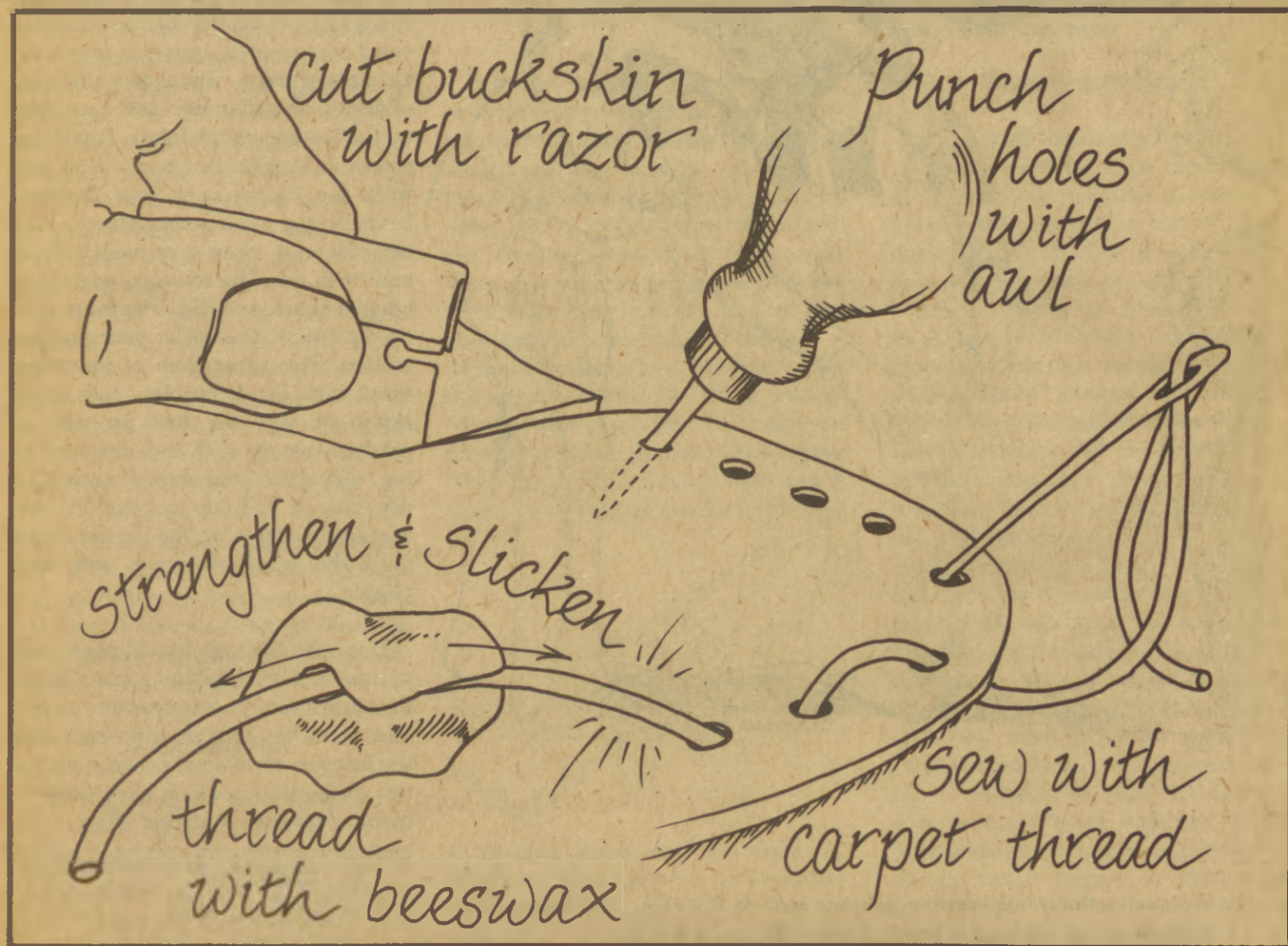
1. A single edged razor blade or a furrier's knife to cut out your pattern.

2. An awl to punch holes in the leather so you can stitch it.
3. Beeswax to strengthen the thread and slide it easier through the holes.
4. Carpet thread for sewing.

Simply lay the hide down, fur side down, and begin to cut your pattern, leaving an extra 2½ inches around your hand. This extra space will make your seam, of course, and when you turn your mitten inside out later, will not be seen.

You have to cut four patterns of your hand, sewing two of them together. Punch holes with your awl where you are going to sew, and then using any large sewing needle, put your carpet thread through the holes. For the wrist area simply sew a piece of elastic around it, according to your wrist size, then overlap the wrist band and sew it so it stays in place. Turn the mittens right side in, and your fingers and hands will be warm all winter! □

Elena Hopkins is a writer and lives with her husband and nine-year old son in Moscow, Pennsylvania. Illustrations by Liz Buell.





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Herbs of the Nativity

by Barbara Overton Christie

Most of us associate herb lore and usage with the Middle Ages and with the colonies of the New World in America. But as the holiday season comes round each year we find how inextricably entwined with our modern Christmas the roles of plants are, many of which have lineages dating back to Biblical times. Holly, ivy and the numerous species of pine and laurel wreath and brighten our rooms and doorways. We preserve the fragrances of our gardens in potpourris and sachets for gifts, and make pomander balls from oranges and apples studded and powdered with spices to freshen our closets. Our feasting is enriched with such pungent culinary flavorings as sage, onion, cloves, cinnamon and peppermint. The very heart of our Yule decoration, the green Christmas tree itself, symbolizes that the holiday is an everlasting celebration of living. Historians agree on several herbs that quite possibly made up the hay in the Holy Manger. And there were other herbs that were hung in the stable for specific purposes.

Lady's bedstraw, *Galium verum*, was commonly used as cattle bedding in those days, as it grew wild on the fields and hills about Bethlehem. There seems little doubt this covered the Manger. According to legend, upon the birth of the Child the fragrant but withered hay burst into bloom, its normally white flowers

transformed into gold. Another legend tells of a wreath of pink flowers forming over the Baby's head, suggesting another common bedding material of the times, sainfoin, *Onobrychis viciaefolia*.

Two herbs were usually mixed with the hay for stable animals. One was wild thyme which grew in abundance about Jerusalem. Its antiseptic fragrance kept away vermin. Pennyroyal, *Mentha pulegium*, was similarly used to ward off ants and fleas. In addition to the fragrant herbs used for the hay itself, bunches of other dried plants were hung about where animals were sheltered, to purify the air. One in common usage was rosemary, *Rosmarinus officinalis*, a shrub found in abundance in Palestine. Another was basil, *Ocimum basilicum*, also native to the Holy Land, favored as a strewing herb to banish odors and also thought to ward off evil spirits.

It can add much meaning to our celebration today if we remember these simple homely barnyard herbs of the Nativity, for they are all as commonly known and easily available in our time as they were then. Many of us set up a creche on a mantelpiece or table in our home. See if you can't gather a few sprigs of all, or at least some of those mentioned above, to make your manger scene come fragrantly alive, with their ancient textures and colors. If, in wintertime, you cannot locate the bedding hays of lady's bedstraw and sainfoin, look for their counterparts next summer to save and dry for another year. Several species of bedstraw grow wild in the United States, and sainfoin is a legume closely related to the purple vetches, widespread weeds. The

others are herbs commonly grown in kitchen gardens, or available dried in health food and herb shops.

We all remember the gifts of the Magi: gold, frankincense and myrrh. It may seem hard to believe that in those days certain plant products were considered kingly offerings, but a love of sweet scents is as old as humanity. The derivation of the word "perfume" is from the Latin "fumus" meaning "smoke," indicating that the burning of fragrant wood, bark, and gum was a very ancient custom, relied upon not just for the pleasure it gave but for clearing and sanctifying malodorous air in closed places. From time immemorial incense had been used in religious rituals, and the Wise Men's offerings were two of the most precious and costly kinds. Frankincense symbolized holiness and came from the tree, *Boswellia carteri*, native to India and northern Arabia. When the bark is peeled off in several thin layers the resinous sap flows out from the core of the tree. This resin, which hardens into a glittering gum, is still known as the finest incense in the world. Its name translates into "free-lighting." Today, powdered frankincense can be bought from herb shops or apothecaries and it is easy to make your own incense to evoke the spirit of that first Christmas night.

FRANKINCENSE INCENSE

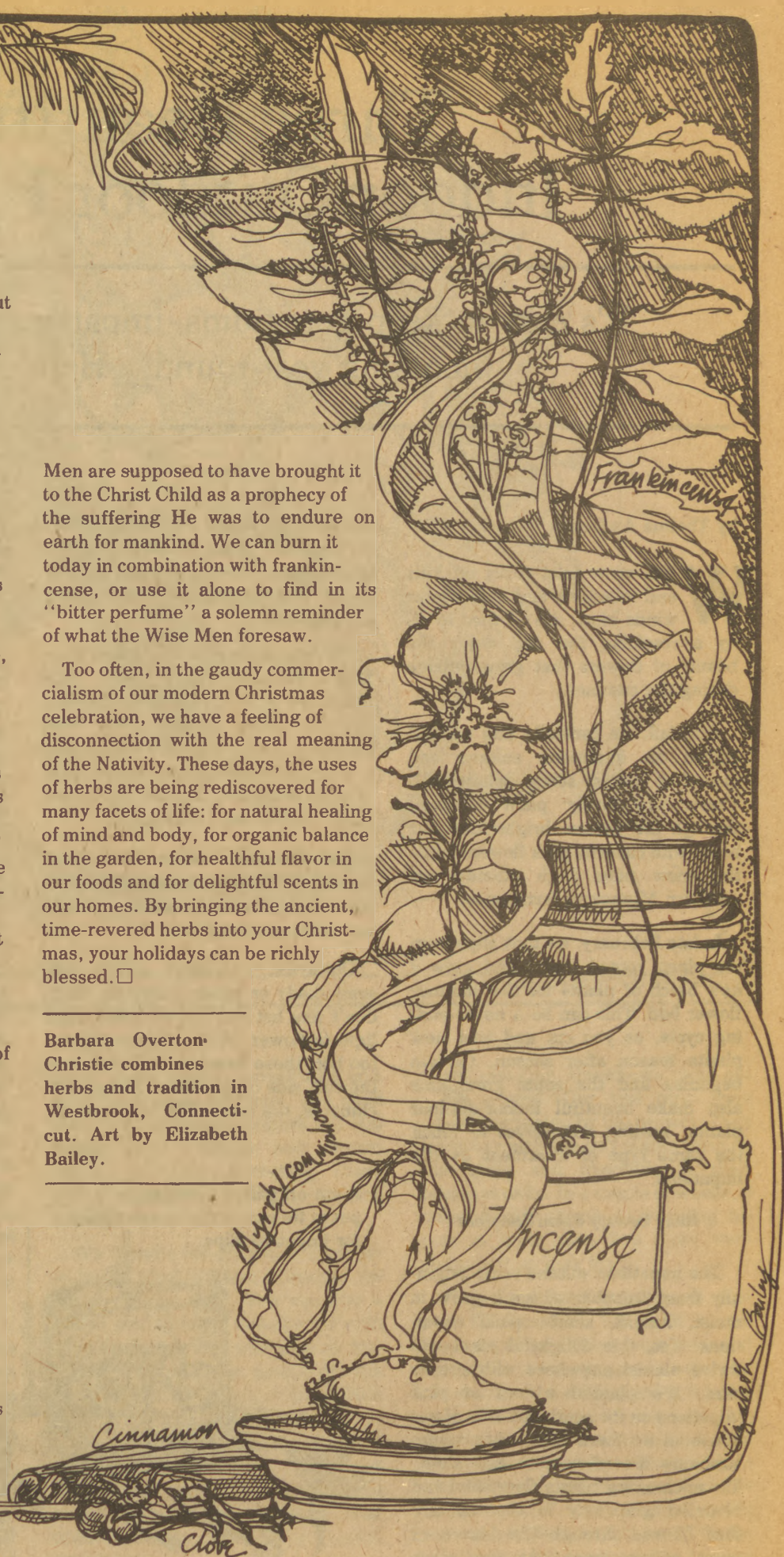
Combine two tablespoons of powdered frankincense, one tablespoon of powdered orris root, and one teaspoon powdered cloves. Stir in a tablespoon oil of lemon. Mix all well together. Place in a stoppered bottle or jar and store for two or three months in a cool, dark place. To use, sprinkle over burning coals or charcoal or use in an incense burner.

Myrrh also comes from a shrub native to Arabia, *Commiphora myrrha*. Both the wood and bark are fragrant, but again it is the gum that is chiefly used. It was valued as a perfume by the Hebrews and in the dried powdered form is used today as a fixative in potpourri. But in Egypt and Palestine the dead were embalmed with myrrh, and the Wise

Men are supposed to have brought it to the Christ Child as a prophecy of the suffering He was to endure on earth for mankind. We can burn it today in combination with frankincense, or use it alone to find in its "bitter perfume" a solemn reminder of what the Wise Men foresaw.

Too often, in the gaudy commercialism of our modern Christmas celebration, we have a feeling of disconnection with the real meaning of the Nativity. These days, the uses of herbs are being rediscovered for many facets of life: for natural healing of mind and body, for organic balance in the garden, for healthful flavor in our foods and for delightful scents in our homes. By bringing the ancient, time-revered herbs into your Christmas, your holidays can be richly blessed. □

Barbara Overton-Christie combines herbs and tradition in Westbrook, Connecticut. Art by Elizabeth Bailey.



Three Beautiful Indoor/Outdoor Plants

It's easy to keep geraniums, impatiens and begonias blooming year-round. Here's how.

by Thelma Anderson

When snow falls softly on hills and meadows and chill winter winds blow, it's so nice to sit by a crackling fire and enjoy the beauty of flowers that grew outside during the summer.

One fall, we carefully dug up and potted an impatiens sultana and placed it on a sunny windowsill. There, the lovely plant bloomed through the winter, brightening our home with cheerful pink flowers while the snow piled high outside our northern Minnesota farmhouse.

In late February, we took slips from the plant, rooted them, and grew a new batch of plants for the summer flower bed. This can be a never-ending cycle, as you cut and root new plants season after season. Certain begonias and the zonal geraniums also make beautiful indoor-outdoor plants, lending themselves to much the same type of treatment as the impatiens.

Busy Beauty From Zanzibar

The impatiens sultana came originally from Zanzibar where it grew in moist, humid, semi-tropical conditions. Yet, this delightful plant will thrive almost anywhere with proper care. We planted a bed of pink impatiens on the southeast side of our house in northern Minnesota where summers are often cool and short. The enchanting plants flourished and bloomed gloriously in the sunlight that filtered through the leaves of giant willow trees. At the other

extreme, we raised red impatiens on the east side of our house in western South Dakota where summers tend to be dry and temperatures soar above 100 degrees.

The impatiens was nicknamed Busy Lizzie because these bushy little plants are so busy producing flowers. Healthy plants almost never stop blooming. The foliage and stems have a waxy, translucent appearance that is quite attractive, but the stems are rather brittle and break easily.

The delicate flowers show-off in many colors from white to shades of pink, bright red, tangerine, purple and even candy stripes.

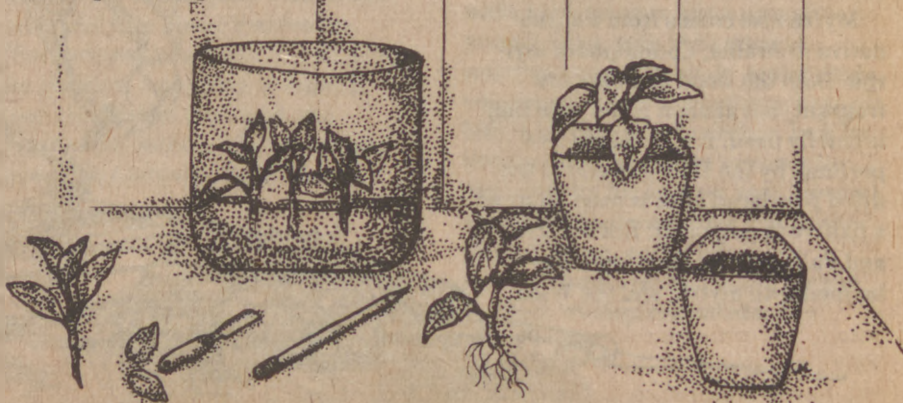
Outdoors, impatiens plants like semi-shady or shady locations. They don't like hot sun but do need good light to flower. Where the sun is not too hot, these beauties will thrive on the east side of the house. In very hot climates, the north side of the house

or the shade of trees is desirable. Since they are semi-tropical, they need evenly moist soil to grow well.

When summer days get short and birds begin to flock, it's time to dig up a plant for the winter windowsill before frost destroys the flower bed. To do this, shove a spade deep into the soil on all sides of the plant and lift it out of the ground. Most of the roots should be intact. We potted our impatiens in a five-inch clay pot.

A good way to prepare a regular pot whether it be clay, plastic or pretty ceramic, is to lay a curved piece of broken clay pot rounded side up over the drain hole. Put in an inch of coarse gravel, rocks or charcoal, add a bit of sphagnum moss or straw to keep dirt from washing through the drain hole and the pot is ready to use. (Dirty pots should be washed in soapy water before using.) Good drainage is required by all house plants.

A cut-off gallon glass jug, a flower pot or tin can, make fine containers for impatiens slips.





Impatiens

Cutting Slips

But, it isn't necessary to dig up a plant to get winter blooms. You can take slips from the plants and root them instead. For taking slips from any of these plants, always use a sharp knife. Cut at a slight slant just below a node. (A node is a joint or knob of a stem—especially a joint from which a leaf grows.)

We cut slips about three inches long—two to three inches is about right. Now, remove all but the top few leaves, make a hole in the starting medium with a sharp stick or a pencil and insert the cutting. It's that easy. You can start plants in a glass of water, but sometimes the slips rot. Roots will get quite tangled, also, if you have several slips in the glass. I

prefer sand, perlite, vermiculite or a mixture of these mediums. You need a mix that will hold moisture but still supply good drainage and remain aerated to encourage rooting. These are good starting mediums for any cutting.


We found a cut-off gallon glass jar to be an ideal starting container for our impatiens slips. You can use a flower pot, a plastic container or a tin can. Enough water was poured into the jar to thoroughly moisturize the sand without flooding it. A dozen little slips were stuck into the wet sand at about two inch intervals. Then, we set the jug on a table away from direct sunlight and covered it with a piece of glass to protect the cuttings from drafts and to provide a humid atmosphere.

Soon tiny, thread-like roots appeared. Our two girls were fascinated by the project. They loved to watch the tiny plants through the glass and checked on their progress daily. In a couple of weeks, a dozen sturdy plants were crying for pots of their own. The roots were about half an inch long.

We potted the tiny plants in peat pots filled almost full with a soil mixture of one-third compost and two-thirds sterilized garden soil. You can sterilize the soil by baking it in the oven at 180 degrees for one hour. It's simple. Just put moistened soil in a big coffee can or a pan. The heat kills harmful organisms that cause plants to "damp-off." I always sterilize the potting soil because it is so disappointing to have apparently healthy



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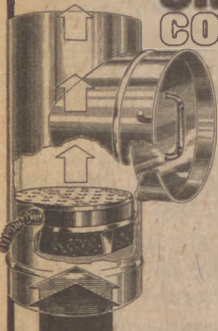
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plants suddenly wilt and die from "damping-off." A recommended soil mixture for impatiens is equal parts of loam, sand and peat moss.

The tiny plants were moved to a sunny location on the windowsill where they grew rapidly. By the time warm days and nights arrived, the sturdy plants were ready for the flower bed. With frost danger past, our impatiens were planted outside for another summer of gorgeous blooms.

The impatiens grow between nine and fifteen inches high and cover themselves with lavish blooms. Their worst enemy is the red spider mite, and the best control is high humidity and evenly moistened soil. I have never had problems with this pest.

Indoors, these plants like high humidity, especially if the temperature is above 75 degrees. They will not tolerate temperatures much below 55 degrees. Since the air inside of most houses in winter is dry, the impatiens plants should be mist sprayed daily. You can increase humidity by setting pots on pebbles in pans of water. However, never set pots in water because the soil becomes water-logged and stagnant. Plant roots cannot stand such conditions and may die.

Impatiens need moderate watering. Allow the top half inch of soil to dry out between waterings. Feed them biweekly with liquid fish emulsion fertilizer and these lush beauties will outdo themselves. You can obtain this fertilizer at garden centers, green-houses and from some seed catalogs.

The Regal Geranium

The first house plant I remember was a geranium with bright red flowers blooming its heart out in a coffee can sitting on the windowsill in my mother's kitchen. The geranium, with its brilliant flowers, has been a favorite for indoor-outdoor gardening for generations.

Zonal geraniums are the most commonly known. They are the most popular type worldwide. The first zonals were brought to England from South Africa in 1710.

Geraniums may be found blooming in the castle of a king or growing in the humble cottage of a fisherman. They grace formal gardens in elegant estates and spread their beauty in backyards across the country.

These popular plants are easy to grow, easy to propagate, and they

produce mounds of showy, brilliant flowers in all seasons. Flowers come in a wide range of color: white, pink, salmon, red, lavender and violet. There are single flowering, semi-double and double flowering varieties.

Geraniums bloom best when slightly potbound. They bloom prolifically, but not continuously as do the impatiens. If you want mid-spring blooms, pinch out tips until February. Plants that are to bloom during fall and winter should be cut back to two or three nodes in August or September. If your plants grow too tall, simply cut back to the desired height. Old mother plants can be forced to bloom in winter, if the tops are trimmed. This cut-back may seem drastic at the time, but the plants won't care. Soon new shoots will appear below the cut and grow into a lush, bushy plant. You can root the cuttings and grow new plants, if you wish.

When the friendly wren carries grass to her little house in the backyard, and frogs boom their love songs from every pond and stream, it's time to put your geraniums outside where they are to bloom during the summer.

Outside these adaptable plants will thrive in partial shade or full sun. They will grow directly in the soil, in boxes, pots or containers of many kinds. In fact, geraniums do as well in pots buried in the ground as they do when planted in the ground and are easier to take up again before Jack Frost comes sneaking back. They like soil that's been enriched with compost and cow manure.

One thing to remember in selecting a location is that the blooms of the double-flowered types do not shatter as easily as do those of the single flowered plants; therefore, they are not as apt to lose petals on a windy day.

Here again, if you don't want to take up the plant, you can take cuttings. Geraniums are so easy to propagate that some growers simply stick the cuttings into the moist soil and let them grow, whether it be outside in the flower bed or inside in a pot.

Four to six inch side cuttings are easy to handle and root quickly. Cut the slip slantwise directly below a node. Strip off the lower leaves and place the cutting in moist starting medium or in a glass of water. (With geraniums this usually works, al-



Geranium

Fibrous Begonia

though with water, there is always some danger of the slips rotting.) Put the slips in light shade and, in two or three weeks, they should be rooted and ready for flower pots.

Geraniums aren't a bit fussy about containers. You can transplant into clay pots, plastic pots or whatever you care to use. A three inch pot is a good first size. Be sure your container has adequate drainage.

Good potting soil for geraniums is three parts good garden soil, (sterilized) one part peat moss, and one part sand. It's good to mix in a teaspoon of bonemeal per five inch pot.

Center the plant in the pot and pack soil firmly around the roots. Leave about an inch of pot above the soil. If your soil is heavy, don't pack it very much. Place your little plants on a sunny windowsill, preferably a southern exposure. Geraniums need lots of light to grow strong and healthy so they can produce abundant flowers. They don't require as much water as the impatiens or begonia. The plants should be watered thoroughly from the top and then left until the soil surface feels dry to the touch. You can test the soil by touching it a couple of days after watering. Too much water, or too little, causes leaves to turn yellow and fall.

Geraniums prefer lower humidity than the impatiens or begonia, but if the air is too dry, as winter air often is, the leaves may turn brown and the buds wither instead of opening. So again, we increase the humidity by

setting pots on pebbles or bricks in a pan of water. Inside, geraniums like lots of direct sun. They love a southern exposure.

Geraniums may benefit by a feeding of fish emulsion liquid fertilizer or manure tea once a month. But a word of caution--too much fertilizer tends to cause heavy foliage and few blossoms.

All plants should be rotated once a week to keep the branches from reaching toward the sun. Plants that lean toward the window grow lopsided and homely.

Queen of the House Plants

Last but not least, comes the begonia, the Queen of house plants. There are over 2000 varieties of the exotic begonia, ranging in size from tiny creepers to sturdy giants, ten feet tall.

The common garden begonias are divided roughly into two classes--tuberous and non-tuberous. The tuberous begonias have huge, gorgeous flowers of many colors, but during winter the tubers are stored until the next season.

We are interested in the non-tuberous types. They are again divided into two groups--fibrous rooted and rhizomatous. The popular Rex begonia is rhizomatous and is grown mainly for the magnificent ornamental foliage. Its leaves that come in varying shades of red, pink, lavender, are white rimmed and veined in shades that go from light green to almost black. Rex

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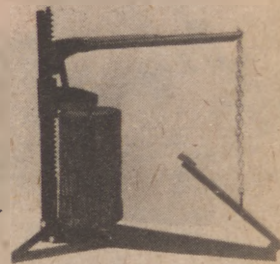
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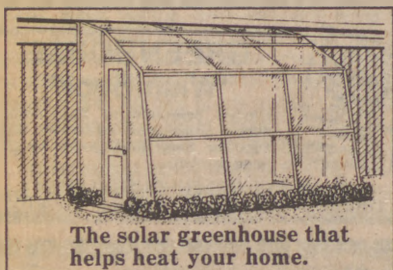
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begonias do not like direct sunlight, so the best spot is a north window or a terrarium. If put outside, the pots should be set on a shady patio where the plants will be protected from the wind and weather.

The plants commonly seen covered with flowers and growing in beds and borders outdoors and in pots indoors, are the ever-blooming *semperflorens* which are fibrous rooted. Begonia leaves come in differing shapes and sizes from the strange and lovely angel wing to the serrated and the maple leaf. Their flowers also come in different shapes and enchantingly beautiful colors.

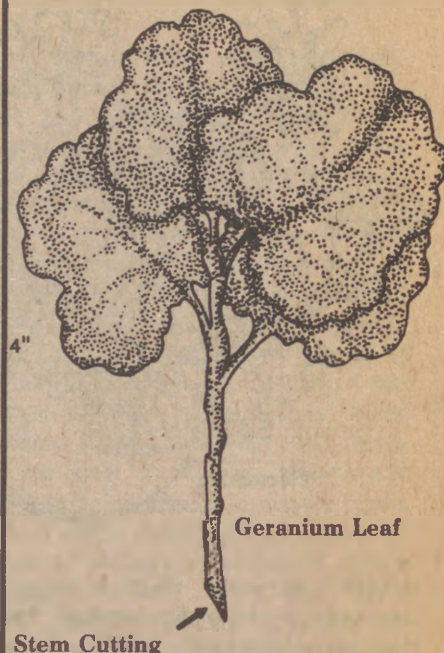
You can find plants with tiny flowers and others that are covered with blooms two inches across. Some are double flowered; some single with translucent petals in shades of red and pink, or perhaps lily white. They claim such delightful names as *Cinderella*, *Red Wonder*, *Melody*, *Love Me* and *White Christmas*.

The *semperflorens* is a low, bushy plant that is excellent for beds and borders. These exquisite plants will thrive and bloom all summer in full sun where temperatures do not exceed 90 degrees. In hotter climates, they need some shade. Here, the east side of the house where they get shade during the hot afternoon, or the cooler north side, or the sun-dappled shade of a big tree is good. The semi-tropical begonia loves a humid atmosphere and porous soil with lots of leaf mold and a bit of dry, dehydrated cow manure mixed in.

To start plants for winter beauty in the house, take cuttings in August or September. Begonias will root in three to six weeks. You can root the fibrous rooted types by either stem or leaf cuttings, and the *Rex* by leaf cuttings. Take three to four inch cuttings about two inches below a leaf. Remove the lower leaves and insert the stalk in the moistened rooting mixture at a 45 degree angle. Perlite is considered to be the best rooting medium for begonias because it stays so well aerated.

To root with leaf cuttings, take a healthy leaf with about an inch of stalk. Cut the leaf across the main veins on the underside. Insert the stem end into the starting medium and pin the leaf down flat against the medium with a hairpin or a piece of bent wire so that the cut places will be in constant contact with the wet

Starting New Plants



The fibrous root types are rooted by stem or leaf cuttings.

Take 3 to 4 inch cuttings about 2 inches below a leaf. Remove lower leaves and insert stalk in moistened rooting mixture at a 45 degree angle.

Perlite is the best rooting medium for begonias.

surface. Plantlets will form at each point of injury.

Cover the cuttings with plastic, or invert a glass or a jar over them to maintain a humid atmosphere. Keep root cuttings in filtered light in a warm place and ventilate by lifting the glass for ten minutes each day. Wipe off any moisture that collects on the glass.

When the little plantlets are about two or three inches high and well rooted, they are ready to be planted in a three inch pot. With a fork, gently lift the plant. Hold it in the container with one hand while sifting soil around the roots with the other. Do not firm the soil; instead, rap the container sharply against the table to settle the dirt. Watering will further firm the soil around the tender roots. When potted cuttings are a few inches tall, pinch out the tiny pair of top leaves to encourage bushy growth.

A good soil mixture is equal parts of loam, sand, peat moss, and leaf mold.



Fibrous Begonia

Stem Cutting



Rex Begonia

The Rex is rooted by leaf cuttings.



Impatiens

Stem Cutting

To root with leaf cuttings, use a healthy leaf and leave an inch of stem. Cut underside of leaf across the main veins.

Insert stem end into starting medium and pin leaf against starter using a thin bent wire so cut places keep in constant contact with wet surface.

Plantlets form at places of injury.

To maintain humidity, cover cuttings with plastic or inverted glass or jar. Keep this in a warm place and in filtered light. For ten minutes each day lift cover to ventilate your plantlet.

Another is three parts soil and one part peat moss. When you buy peat moss get the coarse brown type rather than the finely milled darker variety. The brown peat moss is more porous and better suited for house plants. Don't over water begonias. Water them sparingly and keep the soil evenly moist. Allow the top inch of soil to dry out between waterings. Rex begonias like a humidity of 30 percent, the semperflorens not quite that much. Here again, you can increase the humidity by setting pots on pebbles in a pan of water.

Semperflorens begonias like some sun but the Rex does not. Use curtains or a northern windowsill for shade. Begonias should have night temperatures between 55 and 60 degrees. They don't like drafts, dry air, or sudden drops in temperature. If exposed to such extremes they may shed their leaves. As house plants, most begonias need some pruning or

the plants will grow lopsided or too tall. So pinch off the tips to make the plants bushy and attractive. You can root these pieces for new plants, if you wish.

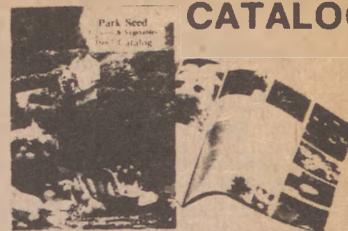
In the spring, you can take slips and root new plants for outdoor beds and borders. Begonias should not go outside until the ground and weather are uniformly warm.

While you can take cuttings from all of these versatile plants anytime, but two practical seasons are during March or early spring for summer plants, and during August or late summer for winter plants. Then these lovely plants will brighten winter's gloom and enhance the summer scene. □

Thelma Anderson enjoys her variety of beautiful plants in Midland, South Dakota. Art by Caren Caljouw.

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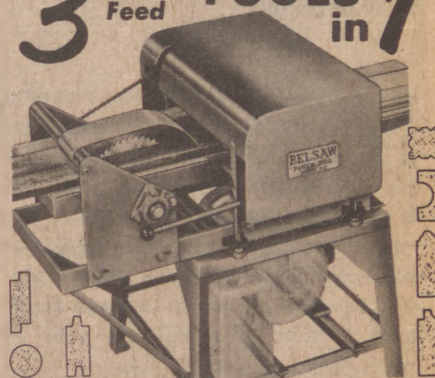
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Great for Your Garden...

Green Manure!



by Clue Dennis

No soil improvement scheme should be without at least one phase of green manuring, for the process supplies humus to the soil in the cheapest and most effective way. The important object of green manure is to increase the water-holding capacity of the soil. Even fairly good garden soils will not hold as much water as they should.

Let's assume the worst conditions. Say the land you want to improve consists only of subsoil, or contractor's fill—in other words, a weedy lot. After first plowing under all the weeds, allow the rough furrows to stand as they are for 10-15 days. Then disk, harrow or coarsely rake the area and sow a very thick crop of buckwheat. Even on the poorest land the buckwheat will make a fair stand and should be allowed to grow only about eight inches high before turning it under. Wait another ten days, then sow another crop of buckwheat as before which will germinate and grow considerably better than the

first one. After this last one is plowed under, let the land lie fallow until October, then put in a heavy seeding of winter rye. In the spring plow under the rye when it is about nine inches high.

All green manuring schemes need not be so intensive, unless your land is really in bad shape. Sometimes a crop or two will suffice to add all the humus the soil will need.

While the above is a good method for the physical texture of a soil, it adds little real plant food to it. This is best accomplished by planting legumes such as pea, clover, vetch and alfalfa. Green manure crops are usually low-priced seed and much cheaper than other fertilizers. They also have more benefits than the average chemical fertilizer. They act as an insulating blanket, keeping the soil warmer in winter and cooler in summer. This encourages soil life activity in general and earthworm growth in particular. The more earthworms, the more channels they'll burrow deep in the subsoil, bringing to the surface useful minerals and nutrients which will increase the

health and insect-resistance of food crops. The roots of many green manure crops themselves reach deeply into the subsoil where they also absorb and bring up valuable nutrients which will revitalize the soil when they are plowed under to decompose.

Plants used for green manures are of two classes: Nitrogen gatherers (legumes), those that work over atmospheric nitrogen from the air into the soil; and nitrogen consumers (nonlegumes), those that cannot perform this function but use what nitrogenous compounds are already in the soil. The former are generally the most important because they increase the supply of this essential element of plant growth. The latter are favored for short-term production of organic matter.

The principal nitrogen-gathering crops are clovers, cowpeas and soybeans. Choice of crop will depend upon the time of year. Some, such as cow-peas and buckwheat, require warm or hot weather for their development and are susceptible to

frost; others such as rye and winter vetch need cool weather and are resistant to frost damage. Some cover crops add as much as 150 pounds of nitrogen per acre of garden soil or the equivalent of approximately five tons of manure.

Sweet clover or melilot has notable value as a green manure, especially on heavy soils, because of its deep rooting habit and the abundance of its foliage. However, if the soil is acid it may fail unless lime or superphosphate is applied shortly before seeding. Such seed gives best results if sown in late fall or on the snow during the winter. In these cases the plants get an earlier start than the weeds which they choke out.

Another advantage of green manure crops is that, when these are rotated season after season, plant diseases and insects are discouraged. They are not willing to attack a

healthy soil and will turn to weaker fields. Green manuring has another advantage over the usual composting methods in that it supplies the soil with succulent organic matter at the peak of its nutritional benefit. Compost, no matter how carefully tended, will lose some of its nutrients due to leaching and the elements. But by careful treatment of the soil with green manure, the soil will hold its nutrients, especially the minerals found only deep in the subsoil. These crops also decay in the soil fairly quickly. In warm weather with moisture present, almost complete decomposition takes place in less than six weeks. □

Clue Dennis makes his home on Grindlestone Farm in Naples, New York and writes on all aspects of farm life and working with nature.

Some Good Green Manures

LEGUMES	CHARACTERISTICS
Alfalfa	Deep-rooted, does well in all but sandy, clay, acid or poorly-drained soils.
Clovers	Many varieties for all soil types and climates.
Cowpeas	Quick growing, good soil builder.
Velvet Beans	Grown in the South, one of the best crops for sandy, poor soils
Vetches	Varieties for all climates, will grow in any reasonably fertile soil with ample moisture.
Soybeans	All soils including sour and all climates.
NONLEGUMES	
Barley	Needs rich, loamy soil, grown mainly in North.
Buckwheat	One of the best for rebuilding poor or acid soils, mostly grown in Northeast.
Millet	Does well in poor soils, mostly grown in arid regions of the South and Southwest.
Rye	Grows well in all soils.
Wheat	Needs fairly fertile soil, grown all over, several varieties.
Oats	Needs mild winters, will grow in any soil with sufficient moisture.



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The Gift of Straw



by Evelyn Witter

Straw is a most symbolic Christmas material, for it was this lowly and common grass that provided the first bedding for the Christ Child, long ago. But besides its humble uses, this sturdy plant has a decorative nature and can be transformed by the spirit of craftsmanship into ornaments of joy.

Straw can be bought in bundles in most craft stores, but if you are able to gather your own straw during the growing season you'll have plenty of time to work with it until you design it into the finished products.

Due to its pliancy, straw can be designed into stars and fashioned into shapes of animals and human figures. It can be inlaid on boxes and bags, made into mats, plaited, twisted, gnarled, torn into shreds, and manipulated into as many items as individual initiative and imagination, fancy and creative talent can conjure up.

Rye straw is the most suitable of all vegetable straws, but wheat and barley straw are quite good too.

Unthrashed straw is to be preferred to thrashed straw because the stalks are less likely to have been damaged.

Growing stalks should be picked a little before the grain is ripe, in dry, sunny weather. Straw must not be left lying in the rain but should be spread out to bleach early in the morning and turned over, repeatedly.

To remove the spikes on their sides, lay the stalks in water for a time and then pull the spikes off. The little knots on the stalks must be pared off with a knife.

Straw may be used whole or split. To split straws, first soften them in water. Slit straws with sharp scissors or a knife. Iron them flat to make wide strips, switching the iron to the highest temperature. Before ironing, lay a thick pile of newspapers on a table with a white piece of paper laid over the newspaper to prevent the printing ink from coming off on the damp straws.

The thick underlay is particularly necessary if you want to make straw a little darker than its natural color, which is done by lightly browning it with the iron. Light-colored damp straws can also be painted with fabric paints.

The use of straws as a Christmas material is growing in popularity. In

recent years foreign countries such as Sweden, have designed straw ornaments for export to this country for Christmas decorations. The highlights in the straw gleam on the Christmas tree and are a delight to families. Who can compare assembly line ornaments with those hand-crafted from natural materials? The objects you can make from straw are artfully charming, yet natural.

The Christmas story, having suggested the use of straw to commemorate this most special of Holidays, opens the door of creativeness to those who take advantage of straw's workability, versatility, and best of all, availability. □

Preparing Straw

1. Wheat stems and heads (stems hereafter will be referred to as straw).
2. Container of water
3. Damp towel

Directions:

Step 1: Cut off wheat above first joint.

Step 2: Submerge in water until pliable (at least one hour).

Step 3: Wrap soaked wheat in large, damp towel to keep moist.

Make a Straw Star

Material:

1. 14 three-inch stems of dampened straw.
2. One foot of thread.

Directions:

Step 1: Cut dampened straw into 14 three inch sections.

Step 2: Tie seven stems together at center with thread. Pull tight. Stems will fan out on either side of thread.

Step 3: Repeat step 2.

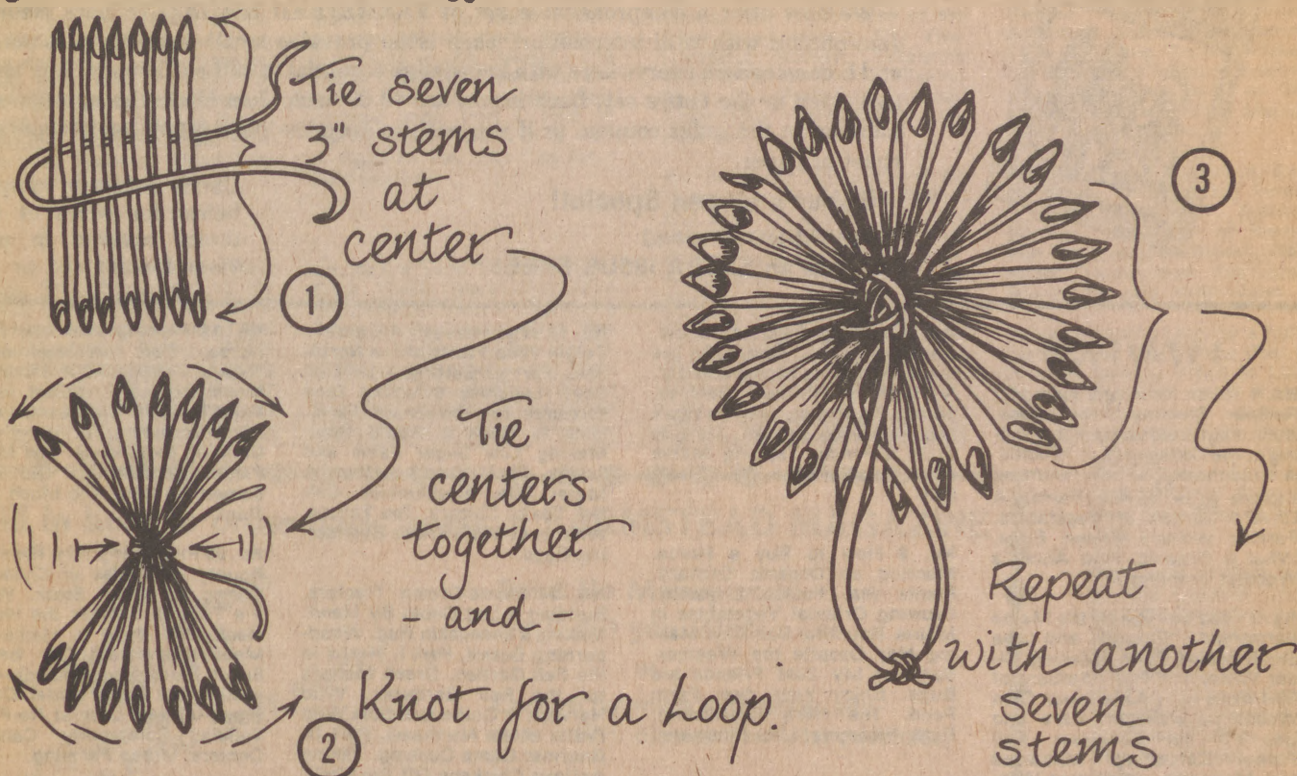
Step 4: Lay one bunch of stems vertically. Cross with other bunch of stems by laying them horizontally.

Step 5: Tie centers together with thread thus forming a circular star of straws.

Step 6: Knot ends of thread to make loop so star may be hung on Christmas tree.

Evelyn Witter is skilled in gardening and crafts and makes her home in Milan Illinois. Art by Liz Buell.

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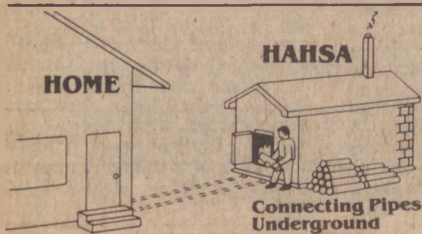
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A New Leaf

Set aside a special corner in your garden to grow these three out-of-the-ordinary vegetables...



PHOTO: Burpee Seeds

Globe Artichoke

by Stephen R. Bull

Part of the excitement each growing season holds for me is the anticipation of trying several new vegetables in the family garden. Not all attempts have been successful (my luffa sponges went past the eating stage but failed to develop into usable bath-time scrubbers one cool, damp summer), but I am always amazed at the number of delicious, uncommon vegetables

that are relatively simple to grow. In fact, we even set aside a special corner of our plot to try different plants. Without sacrificing much of our precious garden space, we are always able to experiment with some new additions each year.

Many of these experimental plantings have met with such enthusiasm that they are now an integral part of the garden plan. The three vegetables that follow are good examples.

Castroville, California bills itself as "the artichoke capital of the world," and virtually all of the globe artichokes sold in supermarkets originate in this small coastal town. With mild winters and cool, damp summers, Castroville is ideally suited for growing the vegetable as a perennial. Yet it is often a simple matter to produce a crop in less hospitable regions.

Artichokes (*Cyanara cardunculus*) are a variation of the thistle-like cardoon and originated in the Mediterranean region. Both are members of the sunflower family and produce beautiful purple flowers if unharvested. It is the flower bud, however, that makes this plant so popular.

While they may be propagated from seed, the resulting plants are not always true to type. All commercial growers and most home gardeners have found the greatest success by planting the shoots, or suckers, that grow from the base of the artichoke.

Six suckers cut from our main plant and brought inside before the first frost, sat on a windowsill throughout the winter, out of direct sun. Despite the periodic drying of larger leaves, they survived with just a little care and water to be planted the following spring in the garden.

Depending on windowsill space and your love for artichokes, one plant can yield as many as three dozen new plants by the third season. In an ideal environment (mild winters, cool damp summers) the plants are perennials but should be replaced every three years for maximum yield.

Artichokes are attractive, with thistle-like, large leaves and an unusual light green coloring. In northern climates they attain a height of about two to three feet and should be spaced about two feet apart. They prefer rich soil and do especially well with a seaweed mulch.

Flower buds should be harvested when still tight and with about one inch of stem attached. A bud should never be pulled; a sharp knife is the best tool for gathering.

Problems and diseases are few. If aphids or flea beetles become a problem, however, a spray of one-part dish detergent to twenty-parts water is effective. We have had good success with plain water shot from the garden hose in a stream strong enough to wash the little critters away.

STEAMED ARTICHOKEs

4 large artichokes (or one per person)
lemon juice
butter

Wash artichokes and cut off stem at base. Remove the tough outer leaves. Set in deep saucepan and add one cup of water. Bring to a boil and cover tightly. Continue boiling until outer leaves are easily pulled off. (About 30 minutes). Drain upside down in colander. Serve upright with melted butter seasoned with lemon juice.

To eat, pull off leaves, one by one, dip, and scrape the fleshy part from the base of the leaf with your teeth. Leaves become more tender as you approach the center.

The choke, or purple flower center, is inedible, but the best part lies just beneath it! With a grapefruit spoon, gently remove the flower to expose the meaty, tender heart. Dip and enjoy!

BAKED STUFFED ARTICHOKEs

8 large artichokes
2 cups diced, cooked chicken
2 cups milk
3 tablespoons cornstarch
1 can condensed cream of mushroom soup
½ cup sliced mushrooms
¼ teaspoon salt
¼ teaspoon pepper
¼ teaspoon marjoram
½ teaspoon paprika
½ cup sliced Jerusalem artichokes (optional)

TOPPING:

1 cup whole wheat bread crumbs
¼ cup butter/margarine

Mix cornstarch with ¼ cup milk in saucepan over low heat. Add all other ingredients except globe artichokes and topping. Cook until hot. Meanwhile, prepare artichokes for steaming and cook until barely tender. Cut out the prickly center and set upright in baking dish. Fill with chicken mixture. Top with bread crumbs mixed with melted butter, cover, and bake at 350 degrees F. for twenty minutes. Uncover and continue to bake for an additional ten minutes to brown the tops. Serves 8.

To freeze artichokes: For best results, freeze only whole, small (under 2½ inches) artichokes. Trim stem and leaves, blanch for four minutes, and freeze in plastic bags from which most of the air has been removed. To serve, steam for about ten minutes.



Garlic

Garlic has been used for hundreds of years for its unique flavoring and medicinal qualities. Yet it was only in the mid-1950's that a German doctor recognized what herbalists had known all along: garlic really does have curative powers!

Young garlic contains a natural antibiotic, present in the oil, called allyl disulphate. Organic "blender" sprays made from water and garlic cloves help cure such plant diseases as downy mildew, cucumber and bean rust, angular leaf spot of cucumber, bean anthracnose, early blight of tomato, brown rot of stone fruit and bacterial blight of beans. Garlic spray repels various insects, too.

Garlic is often considered difficult to grow and is something of a rarity in most gardens, yet a few simple tricks almost guarantee a bumper crop. One secret is to plant it in the fall, just before a hard freeze if possible. Space cloves about four inches apart and one inch deep. (Cloves may be obtained from any garlic clove; the ones sold in supermarkets do just as well as more expensive "sets"). Cover with a thick mulch, to be removed in the spring when the ground thaws.

Garlic seed is also available, though hard to find, and plants may be started in February for transplanting in April. Garlic cloves, though, are much easier and tend to produce faster growth.

In addition to the common white and red garlics, elephant garlic (widely available from most seed companies) is even winning over confirmed "garlic haters." Very mild and large, elephant garlic needs wider spacing in rows than its smaller counterparts. Spacing cloves six to eight inches apart may sound extreme, but will produce the largest bulbs.

When the plants' tops begin to yellow and die, they should be pulled and the tops braided. Hang in a dry, protected place with good air circulation for curing. Bulbs may then be kept in a box or mesh bag like dry onions. Knock off loose dry dirt, but do not wash until ready to use. To remove garlic odor from hands, sprinkle with salt and rinse in cold water.

During the winter, you might try growing a few cloves of garlic in a pot on the windowsill. Take a cutting of the leaves for flavoring and use as you would chives.

Garlic plays an important part in many dishes, especially the famous Italian tomato-based ones. Elephant garlic is so mild, though, that you may enjoy it sliced directly into salads, or cooked in the following manner:

BAKED ELEPHANT GARLIC

2 cups elephant garlic cloves
½ cup cream
salt and pepper to taste

Peel and slice cloves lengthwise. Arrange in shallow baking dish. Sprinkle with salt and pepper. Add cream to barely cover. Bake at 325 degrees F. until tender. Serves four.

Salsify

Salsify, or "vegetable oyster," is a real favorite at our house. Native to the Mediterranean area and southern England, salsify is treated much like parsnips in culture. It requires a rich, light soil and its flavor improves with frost. A neutral to somewhat alkaline Ph is preferred.

All varieties of salsify take about 120 days to mature, but it is a hardy plant, which should be sown as soon as the ground is workable. Harvest it before a hard freeze, which gives most northerners ample time. Mammoth Sandwich Island is the most popular strain, although some gourmets prefer the Long Black (Scorzoneria). The tender leaves of the latter are very tasty in green salads, and with careful picking the plant will yield two crops, one above and one below ground. Closely related, but not a true salsify, is the Spanish Oyster Plant, or Golden Thistle.

To describe salsify as having a taste similar to that of oysters is stretching the imagination a bit, since its texture and flavor are much different than the bivalves I've had

the pleasure to know. The "vegetable oyster" is, though, a very good ingredient in oyster stew and perhaps it is through this compatibility that it earned its name.

Plant seeds a half-inch deep and thin plants to four inches apart in soil worked as deeply as possible. This creates the best-sized roots. The plants are rarely bothered by insects or disease. Salsify can usually be wintered-over under a deep mulch in areas where parsnips and carrots survive with the same treatment. We find that packing the roots in damp sand with tops trimmed to one inch keeps them in top eating condition when stored in a cool place such as a cellar.

Salsify is at its best when pared, boiled until tender and served with a butter or cream sauce. (Add a bit of lemon juice or vinegar to the water to prevent discoloration.)

SALSIFY FRITTERS

3 cups pared salsify, cut into chunks
butter or margarine
salt and pepper to taste
flour
lemon juice or vinegar

Boil salsify in water to which a dash of lemon juice or vinegar has been added. When tender, drain and mash. Season with salt, pepper and butter. Form into flat cakes, about three inches in diameter. Roll in flour. Brown in butter in heavy skillet and serve. Serves 4. □

Stephen R. Bull loves to garden and grow unusual plants. He lives on Santa Claus Lake in Temple, Maine.

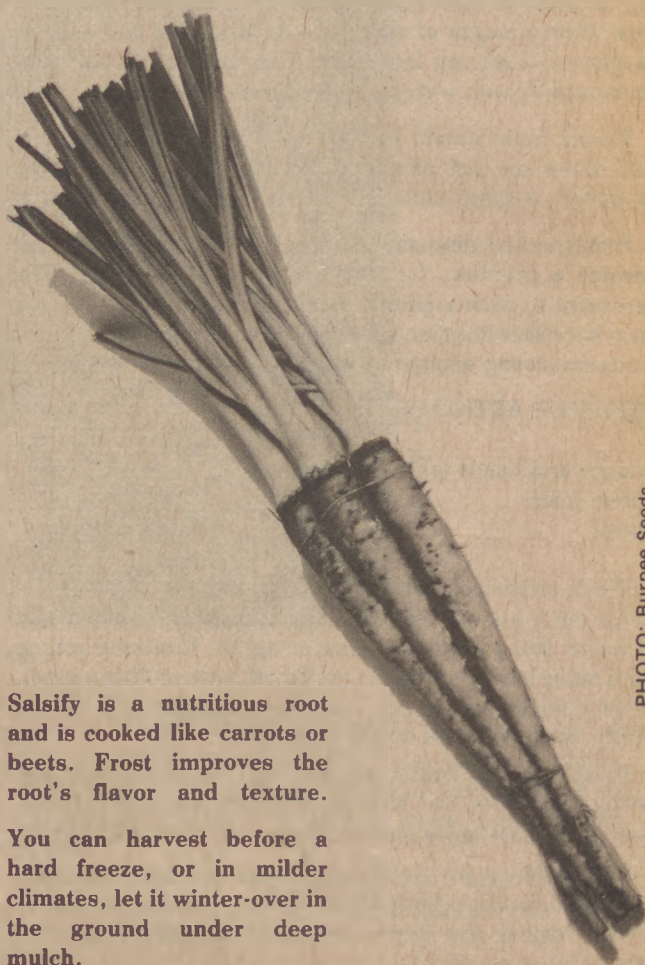


PHOTO: Burpee Seeds

Salsify is a nutritious root and is cooked like carrots or beets. Frost improves the root's flavor and texture.

You can harvest before a hard freeze, or in milder climates, let it winter-over in the ground under deep mulch.

Mysterious Mistletoe

by Evelyn Witter

Ancient man kept his mistletoe from one year to the next. He believed that the plant had supernatural powers to help him through every day of the year. He believed that the word "Mistletoe" came from the missel thrush, a messenger of the gods who brought the plant to earth.

Readers of Virgil point out that the mistletoe was called the Golden Bough and that when Aeneas plucked it, he was able to descend to the underworld and come back safely.

In ancient Britain when clumps of mistletoe grew generously on the bare, wintry forest trees, farmers were happy. The Welsh farmers, for example, said "Plenty of mistletoe means plenty of barley!" When mistletoe was scarce, these same farmers wailed, "No mistletoe, no luck!"

And in ancient Britain, it was the sacred plant of the Druids. The Arch-Druid and his fellow priests performed their rites at the winter solstice with elaborate ceremonies centering around the mistletoe.

The chief nature festival of these forest worshippers was held five days after the new moon. Men, women and children went into the forest. They moved toward the oak tree that had the most mistletoe. First came the bards, then a herald. As they came in sight of the tree they hailed it with loud shouts of delight and reverence.

One figure towered above the rest. He was the Arch-Druid. He had a golden chain around his neck, golden beads around his arms and he wore white robes.

He climbed the tree to the lowest branch on which the sacred mistletoe was growing. With a golden sickle, he



cut the branch and let it fall in a fold of his robes.

This plant was so sacred that it was not allowed to touch the earth. The priest then broke the branch into little pieces and gave a tiny piece to each of his followers with a prayer that each one receive divine favor and blessings from nature.

European dairymen placed faith in mistletoe too. They claimed that with mistletoe around, milk would not sour so quickly. Mistletoe caused the butter to gather as they churned.

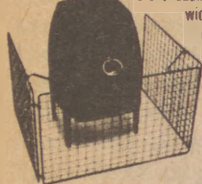
They also hung sprigs here and there in cattle sheds, believing that it had magical powers to help every cow produce a lively, healthy calf.

Villagers placed mistletoe above their doorways. Hanging in the doorway, it was considered to be a night watchman against evil spirits, keeping away all bad dreams. Some people placed mistletoe under their pillows believing it would reveal future happenings in their dreams.

These early Europeans had what they considered a perfect explanation

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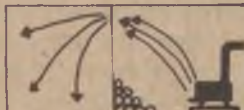
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of the magical powers of the mistletoe. They thought that since mistletoe grew without roots in the ground, surely the gods must have planted it in trees.

The Scandinavian myth about mistletoe was responsible for the "give me a kiss" message mistletoe has carried since ancient times. Balder received a charm from his mother Frigga against all injury from everything which sprang from the four elements (water, air, earth, and fire). Loki, an evil spirit, having a dislike of Balder, formed an arrow from mistletoe which did not grow from any of these elements. The arrow was placed in the hands of the blind Helder, whom Loki directed to launch at the seemingly invulnerable Balder. The mistletoe dart struck Balder to the ground. The tears of Frigga became the white berries of the mistletoe. Through the concerted efforts of the gods, Balder was restored to life and Frigga decreed that the plant must never again serve as an instrument of mischief.

Frigga, being the goddess of love and beauty and grateful for the return of her son, is said to bestow a kiss upon anyone who shall pass under the mistletoe. It is from this old Scandinavian myth that we get our custom of kissing under the mistletoe.

In ancient times in France, amulets were worn around the neck to prevent sickness and for the same reason, rings of mistletoe were worn in Sweden. Monkish herb enthusiasts named it *Lignum Sanctae Crucis*, the Wood of the Sacred Cross. They claimed that the cross of Calvary was made of it. These students of herbs prescribed mistletoe as an antidote for every poison and as a remedy for epilepsy and falling sickness. They also told people to hang pieces of mistletoe around their necks to ward off disease.

Today, in the United States, mistletoe is the common name for the many members of a large family of green parasitic plants that infest the branches of various kinds of trees.

In the United States, mistletoe is represented mainly by the genus *P. flavescens*. It is found throughout the southern Atlantic states forming dense bunches from one to three feet across. The stems are smooth and

green, the small rounded leaves are yellowish-green and grow thickly and persistently. The inconspicuous flowers are followed by waxy-white berries.

Mistletoe is not cultivated but is gathered by collectors for sale during the Christmas holidays because it resembles the traditional mistletoe [*Viscum album*] of Europe. Mistletoe is popular despite the fact it is a parasitic plant. In fact, it is one of the higher plants that is capable of causing plant disease. In the southern and Pacific states it is a common pest of many shade trees producing globular masses on the host tree's branches, which spread from a few inches to several feet in diameter. If mistletoe is present in abundance, it is a distinct menace to the host tree, and in extreme cases, may kill it.

Despite its parasitic ways, despite the far-fetched legends about it, despite the great numbers of more beautiful plants on the market, mistletoe is still a must at Christmas time. Tiny clusters of green leaves and white berries decorate homes everywhere. And one legend still persists. During the Christmas season, anybody who chances to stand beneath the mistletoe is immediately held in the sway of its potent powers. They cannot refuse a kiss! □

Evelyn Witter enjoys crafts and folklore in Milan, Illinois. She is also the author of "Straw Ornaments." Art by Elizabeth Bailey.



The Homestead Candle

by Hugh Stevens

While visiting a homestead friend a few years ago, I noticed a shelf in his hallway cabinet that stored several candlesticks, a box containing half a dozen candles and a couple of packs of matches.

"Our emergency lighting system," my friend commented, then pointed out shelves he'd installed at several points through the house for holding candlestick lighting.

But not until I met Ed a couple of years later did I learn that this is only one of the many uses for candles on the homestead. Ed, a carpenter by trade, had grown up on the ridges of Appalachia and for much of his life had lived without electricity. His present home was a hunting camp that he was converting into a homestead.

Ed and I arrived at his place late one cold, dark afternoon. Ed struck a match, then reached up and stuck it inside a large can hanging under the porch eave. Suddenly a pale but adequate light poured across the yard toward the wood shed. Then I saw that the lamp was a large food can hanging horizontally with a candle fitted into its underside. The little flame cast all the light needed for getting wood or for doing any other chores in the back yard.

Later, Ed made a lantern for me from a twenty-nine-ounce food can. Using his pocket knife, he cut a gash about two inches long in the side of the can. Then he made a second cut the same size perpendicular to the

first, like a pie cut into quarters. Placing the butt of his knife where the "pie cuts" crossed, he pushed the points into the can. Then he placed the can on the table with "pie cuts" downward. With an ice pick, he punched two holes opposite these cuts, one at the open end of the can and another at the closed end. Next, he cut a piece of wire about a foot long for the bail.

Lastly, Ed pushed a candle, wick first, up through the opening. Held firmly by the metal points, the candle could be adjusted upward into the can as it burned down. Hanging on a nail or limb, the can makes a handy lantern that is weatherproof to all but hard rains and winds. It can be conveniently left wherever needed for night chores.

Later we found the padlock to the tool shed had been drenched in the day's rain and the keyway was solidly frozen.

Ed lit his candle lantern then lifted the lamp near the lock. Shielded from the wind by the can, the candle flame played over the lock, and soon the key slipped easily in and the door was open.

It may seem strange to think of a candle as a lubricant. But one day I was visiting a friend who had just brought home a new tent for his son. Enthusiasm soon turned to despair however when the new tent zippers proved nearly impossible to work. While the father and son fussed and struggled with the sticking slides, my friend's

eighty-one-year-old grandmother disappeared into the house and returned with a small candle. Rubbing the candle carefully over the teeth of the zippers, she soon had the slides moving freely on the door and windows. Candle wax works just as well on zippers for jackets and snow boots.

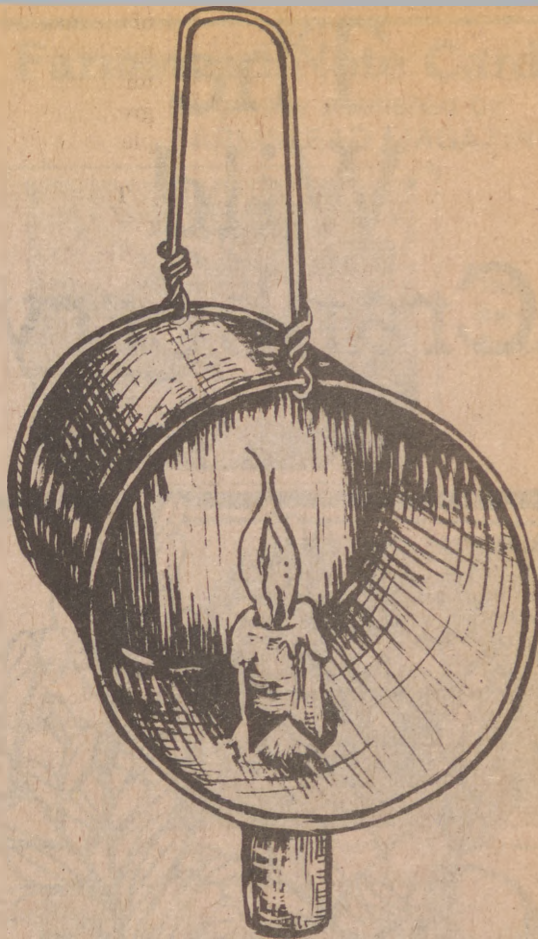
Candle tallow can hardly claim much medicinal value but, in a pinch, softened tallow will bring relief to chapped hands or lips. Applied to a sock, it can ease the pain of a heel rubbed raw by a boot.

Tallow also fills many needs as a waterproofing agent. Outdoorsmen for many decades have sealed their hunting boots by pouring melted tallow into seams. Soft tallow rubbed into tent fabric can stop a seep leak. What works on tents will work equally well on the homestead tarps.

Most of our society seems to have forgotten waterproof matches as reliance for lights is placed on book matches and disposable propane lighters. Old fashioned strike-anywhere matches, though, still have a place around the homestead. Stick matches can be waterproofed by two methods. Dip match head in melted tallow to about half of the stick; pack loosely in a small box. A second method, is to lay matches in a small box and pour melted tallow over them. Break out matches one at a time for use.

Flashlight bulbs go bad. Batteries run down. Lanterns break and run out of fuel, but candles are nearly indestructible. Break them, drench them, drop them, mash them. They still work!

Hugh Stevens lives in Hackettstown, New Jersey. Art by the author.



The Wild Cranberry



roadside swamps and ponds. Indeed, they are sunshine plants. One cup of cranberry cocktail contains as much ascorbic acid as a cup of grapefruit sections. For this reason Colonial sea captains used to store cranberries in their shipholds to prevent scurvy.

Several different types of cranberries grow in the wild. The plant known as the highbush cranberry is really a smooth-branched viburnum which grows to sumac height and produces large red oval fruits. In the fall these are used in cranberry jellies. However, the substitute usually stops here, for unlike the entirely edible low-bush cranberry, this tree fruit has flat awkward stones.

Northern mountain cranberries are small, sparse and extremely tart. Another smallish berry is the spotted wren's-egg variety which grows on forest peripheries as far south as North Carolina and extends north to Oregon. Both of these pea-size cranberries make for arduous gathering and are better left to black bear and migrating birds.

The large or American cranberry, common to lowlands, is an offspring of the wild Colonial discovery, now widely

by Julia Older

The English author Charles Dickens once complained that you couldn't sit down to a New England meal without a large dish of cranberries at the center of the table.

Today this custom has dwindled in most homes to Thanksgiving time when cranberry pie, relish or cocktail is served as a colorful treat. You'll be even more thankful for these scarlet Pilgrim berries if you've picked them yourself, and you may again relegate them to the center of attention.

The first settlers called this wild oceanside fruit, "craneberries" because the globes hung from individual stems or cranes. Colonists imagined that the stamen of the white flower looked very much like the bill of a crane.

Today wild cranberries are found throughout northern America (excepting the Rocky Mountains) in peat bogs, marshes, open coniferous lowlands and rocky highlands. Like wild grapes, they thrive near water and seek open sunny locations. For this reason they are often found near



cultivated. What differentiates this type from the others is that the berries do not form just at the tip of the vine but all along the stem. The fruit is sometimes as large as a cherry. It is ripe and abundant from the first frost until the first or second week of November.

Picking wild berries is one of the most rewarding ways to spend a clear, bright autumn day. All you need is a good back, a pail and plenty of patience. With a quick eye you'll be able to spot one or two giveaway berries twinkling in the sunlight through a tangled mass of creeping vines.

These springy vines, which belong to the heath family, hug close to the ground. Each stem is approximately five to eight inches high and grows from an interlocked network of runners. The alternate small oval leaves turn from green to a deep burgundy along with the berries. The weight of the berries pulls the stems downward and many drop off. So finding them is a challenge which may lead to developing your own technique.



Small commercial growers still use comb-like hand-scoops while others prefer machinery. But the sure way to retrieve each precious berry is to pick it by hand. One method is to part the vines at regular intervals, spreading them away. This usually reveals an open patch of sphagnum moss or grass that cushions a handful of berries.

Wintergreen often confuses the inexperienced cranberry picker since these two low evergreens bearing scarlet berries frequently grow side by side.

Chances are that several outings will be required to gather enough berries for a Thanksgiving pie. You may refrigerate or freeze berries until they are ready to be used. They may even be stored in a cool pantry if picked dry and kept in a porous bag. Don't wash the berries. Water shortens their shelf life. For freezing, simply clean out the leaves, twigs and cranberries and seal them in a freezer container. They may be washed when they're ready for your favorite cranberry recipe. What a cornucopia this holiday season will be with the wild tangy cranberry in the place of honor on your table. □

Julia Older is a free-lance writer and illustrator. She lives in Hancock, New Hampshire. Cranberry varieties by Elizabeth Bailey.

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The Farmstead Reviewer

RAISING YOUR OWN TURKEYS, by Leonard S. Mercia, Garden Way Publishing, Charlotte, Vermont 05445. Softcover, 140 pages. \$5.95.

by Jan Willems

There are hardly any up-to-date books for the novice on raising turkeys, so I read Mr. Mercia's book with great interest. It seems to be written mainly for growers who have more than just a few turkeys to raise for their own freezers or holiday-fare, but who hope to sell a surplus to their friends, relatives or a local market at a nice profit. According to this book it is the breeder (or 4 H-club for instance) who has the money and equipment to do it the proper way. For the small or part-time farmer who buys a few poults from the feed store to raise for the holiday table, the book can still give helpful hints but the question is whether that small breeder can, in practice, financially heed all the good advice given.

For example when you read that a 95 percent production-survival rate is possible (and even higher with started young turkeys), but in reality you are glad to end up with about half of the original number bought, this discrepancy can be a bit frustrating.

For the hobbyist who keeps turkeys for pleasure or for show, this book might again give some helpful information, but the main gist of this book, producing a perfectly dressed, heavy bird for the oven, is not the hobbyist's immediate interest.

The author, Mr. Mercia, has an impressive list of credits to his name:

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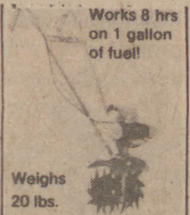
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M.S. in Poultry Science from Ohio State University, 25 years in Extension Service as a poultry specialist, as author of book "Raising Poultry the Modern Way" and as editor for the "Vermont Poultry Newsletter." The turkey book clearly reveals the author's background as it contains a lot of technical up-to-date information. Mr. Mercia has not just been sitting in an office but has been out in the field to see turkeys being raised. It contains a lot of accurate, technical data, good references to sources for further help (I think the book is particularly strong in this field, but rather weak in its bibliography), disease and medication data, clear drawings of housing and other materials and excellent photos. And further, an extensive section (over 30 pages) is included which is often missing in publications of this kind: killing and processing, preserving, cooking and serving turkey. This part also has a very interesting section on producing a cured-smoked turkey delicacy, information you rarely find in any poultry book.

Mr. Mercia makes it clear that you can get a better tasting turkey on the table from your farm than from the

supermarket. Also the demand and higher price for this gourmet bird could yield you a nice profit from your surplus-production, that is if you do it for a few years so that the housing and materials don't just serve a one season's fling.

As an economist, I was a bit disappointed with the scant presentation of the economics of the operations. The book gives as 1981 costs for raising a heavy roaster turkey \$9.30 - \$11.40 (a bit too low maybe) for which you might get about 22 pounds of oven-ready bird. However, a little note states in small letters that labor, housing equipment (and apparently other equipment too), and interest costs are not included. OK, forgetting the labor costs, but with today's prices for lumber and hardware, your "better turkey" might still be a quite expensive luxury. And if you aren't a carpenter or handyman or have no time to do it yourself, it may even cost you an extra sum in labor costs.

I wouldn't dare to quarrel with the technical data in this book. But I could make a few points on management. Mr. Mercia writes a lot under management, but it is more a method or organization of raising than what I

regard as real livestock management, which is to know your animals' natural behavior and handle them accordingly. We often try to adjust the animal to our management ideas instead of the other way around.

The parts on range-raising of turkeys and breeding your own, to me are not the most complete parts of the book. Mr. Mercia clearly favors the modern trend of raising in confinement. I can't share his strong emphasis on debeaking as a prevention of feather pecking (which often indicates faulty management). The disadvantage of debeaking is that full or part-time range-fed turkeys are great foragers, who love to catch and eat all kinds of protein-rich bugs.

One can mention a lot of practical hints, based on experience. For example, be careful to change or bring new objects (feeders, water pans) gradually into the brooder space, as turkeys are very suspicious of new, strange sights and might stop feeding. Act calmly and slowly in their presence. Don't mix turkeys of different ages or flocks, or even an individual which has been separated from the flock for some time, because it will lead to chasing and fighting.

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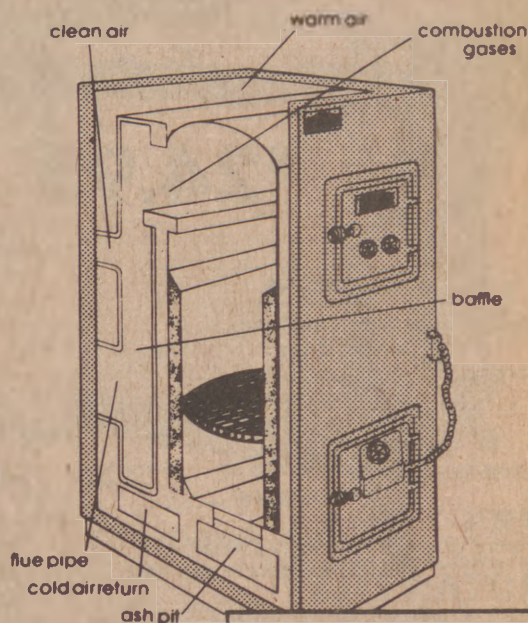
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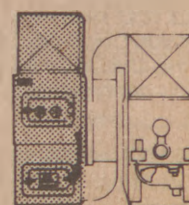
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Immediately remove any bird which is sick or has a wound or blood on its body as the others will certainly peck it to death. On the range, provide not only good, green feed (which can be weeds), as Mr. Mercia states, but also a sandy dusting place. On giving medication (which I would do less of preventatively) the use of a big nose dropper or dipping the beak of a bird in a small container of a fresh solution of medication might be more helpful than giving an injection (which many of us can't do) or adding medication to the drinking water, where the bird won't always drink it when it is real sick, may knock it over or the chemical will spoil too rapidly in warm temperatures.

If you raise your turkeys in an enclosure, I would give even more emphasis than Mr. Mercia does to good green feed, which the birds crave. "Green grows feathers" is quite true, and a richer variety of feed should add to the flavor of the turkey meat.

This book is absolutely worthy of your attention and your money. It costs less than you pay for a 50 pound bag of turkey starter feed--about the

price of three one-day-old poults. It will be a great help whenever you ask yourself: What must I do now? □

MORE OTHER HOMES AND GARBAGE by Jim Leckie, Gil Masters, Harry Whitehouse and Lily Young. Sierra Club Books, 530 Bush Street, San Francisco, CA 94108. 1981. \$14.95.

by Sandy McLaughlin

If you've been looking for a comprehensive, how-to alternative energy encyclopedia, this is the book. Subtitled "Designs for Self-Sufficient Living," this is an updated and expanded version of the 1975 book *Other Homes and Garbage*.

One note of caution: this is more of a textbook for the serious energy conserver than an entertaining sit-down reader. My husband used the original version as the sole text in an intensive college solar energy course. By the end of the course, using the book, he had designed a solar home in such detail and accuracy that any builder could build from his plans. The book is difficult in places since it

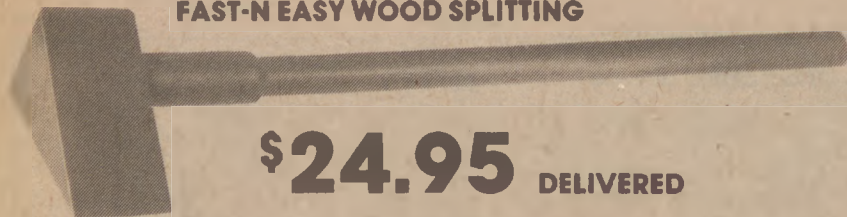
deals with such highly technical material, but it contains a wealth of helpful samples, practice problems with solutions, diagrams, graphs, tables, illustrations, charts and plans to help simplify complex formulas and principles.

Directions are provided on calculating everything you need to know to build an alternative energy home from site selection and landscaping (finding surface water, planting vegetation, using sun, water and wind...) to interior design (choosing building materials, designing fireplaces, locating windows and providing lighting, ventilation and insulation...) Instructions for designing passive and active solar homes, double envelope constructions, greenhouses, solar pools and earth-sheltered homes are all included.

A lot of emphasis is put on the R-values (measurement of the insulation's effectiveness), of different building materials and insulations. Calculating heat loss is discussed in detail so that the particular home's heating needs and needed collector size can be calculated accurately. A national chart takes into account location and climatic considerations.

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A few other examples of topics covered in this most comprehensive volume are: solar hot water systems, waste handling systems (including the various waterless methods), pumping systems for water supplies, solar distillation and locating ground and surface water supplies. There is also a section on how to generate electricity on a small scale from calculating your home's requirements to satisfying its energy needs using wind, water, photovoltaics or any combination.

Lastly, **More Other Homes and Garbage** discusses agriculture and aquaculture dealing with French intensive systems, fertilizers, vegetables, fruit, herbs, livestock, shelter, composting, companion planting, pond building, fish breeding and so much more.

This is not only a text, but several comprehensive courses. Everything needed is there for ambitious self-teachers, those who need formulas and facts and for energy students and professors to use as a main text or supplement. This updated version contains the latest in technology and provides bibliographies if even more information is desired. ☐

FIREPLACES AND WOOD STOVES.
By the Editors of Time-Life Books.
Time-Life Books, Alexandria, Virginia
22314. 1981. \$10.95 hardcover.

by Lynn Ann Ascrizzi

There is a new Time-Life book, the 28th volume in their home repair series called **Fireplaces and Wood Stoves**. It is a beautifully conceived work with extraordinarily simple and precise how-to illustrations and fine color plates. Each page supplies the reader with a tremendous amount of information in the most artistically pleasing way possible.

The first chapter deals with improving existing fireplaces and stoves, detailing many woodburning principles such as: "Extracting the Most Heat From a Wood Fire;" "How Wood Burns From Kindling to Ash;" "Safety Precautions;" "Upgrading the Firebox" (fireplace); "Improving the Chimney;" "A Stainless Steel Chimney Lining;" "Restoring a Second-Hand Stove."

Other chapters discuss prefab fireplaces and their safe installations; building fireplaces and chimneys; bricklaying; mantels; the care and

feeding of a fire; chimney cleaning; storing firewood; felling trees and chain saw safety.

Despite a wealth of facts and how-to, I was a bit discouraged about their coverage, or rather, lack of coverage about cookstoves. The book shows only one small illustration of a cookstove, describes its various parts superficially and provides only the briefest text about its use.

I feel this fine work would have been more complete had it included better mention of the various new and renewed models of cookstoves on the market today such as Tirolia, Stanley, Deville, Findlay Oval and Atlantic.

In many areas, cookstoves seem to be making a come back, and Time-Life has overlooked an important segment of its readership.

Nonetheless, the high quality of this book more than makes up for such oversights. I was pleased, also, to see that Jay W. Shelton, author of **Wood Heat Safety** and **Woodburners Encyclopedia** was one of the Time-Life consultants on this volume. He is certainly known as a trusted expert in his field, and to my mind, his presence lends **Fireplaces and Wood Stoves** greater authority and depth. ☐

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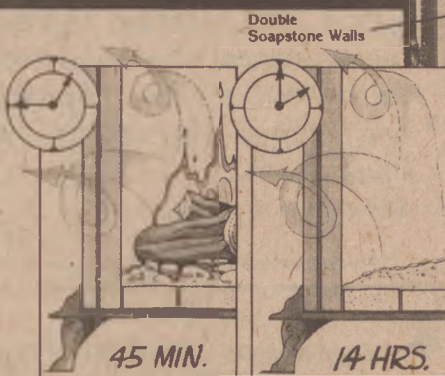
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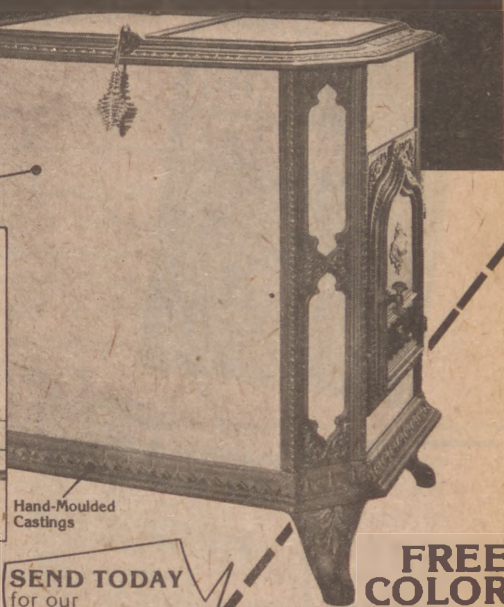
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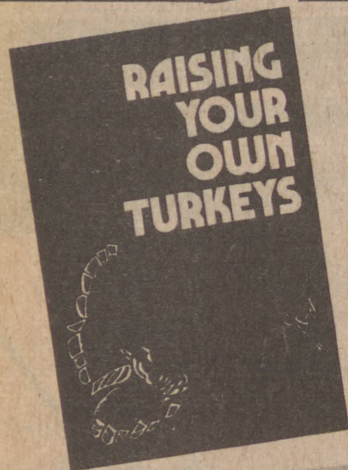


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★ RAISING YOUR OWN TURKEYS

by Leonard S. Mercia

The complete book on raising turkeys from young poults to delicious, thick-breasted birds. Includes information on selecting, housing, feeding raising, killing and dressing turkeys as well as health maintenance, disease control, preservation, plans for low-cost shelters, production costs, equipment and supplies. Source lists. 160 pages, 6" x 9", 40 illustrations.

Softcover ...G-86\$5.95

*As reviewed in this issue.



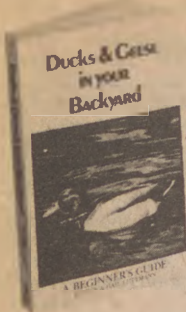
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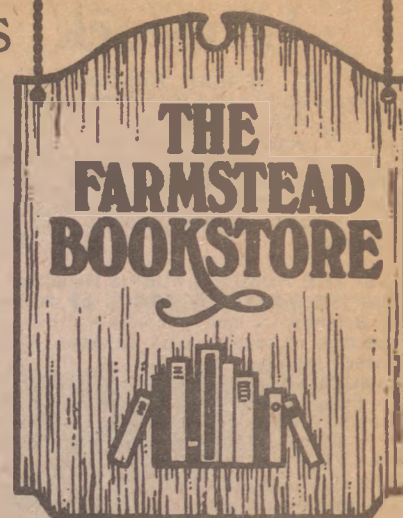
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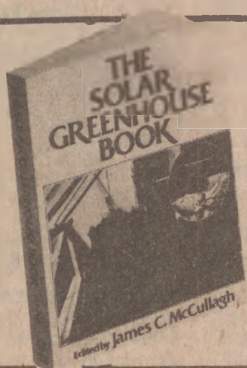
SPECIAL GIFTS FOR CHRISTMAS



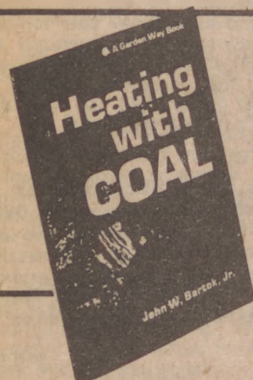
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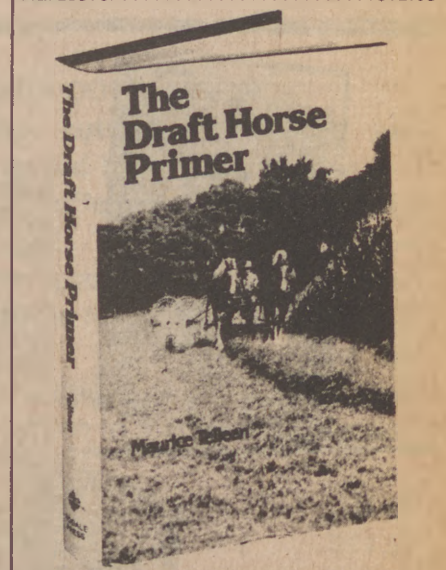
R-55 RAISING RABBITS by Ann Kanable. Covers all aspects of raising rabbits on a small scale: housing, stock, breeding, feeding, and health care. Discussions of meat production and use of by-products such as pelts and manure are included. 208 pp., photos and illustrations. Softcover\$7.95 Hardcover\$10.95

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R-67 ROOT CELLARING - The Simple No-Processing Way to Store Fruits and Vegetables by Mike and Nancy Bubel - This book, the first devoted entirely to root cellaring, covers the subject thoroughly. It describes a variety of small-scale root cellaring techniques and give instructions for constructing different types of cellars of varying size. The book provides ideas for country, suburban, and city root cellars. Not everyone can live in the country but, with the aid of this book, everyone can benefit from natural cold storage. 320 pages, photos, illustrations, charts, index. Hardcover \$12.95

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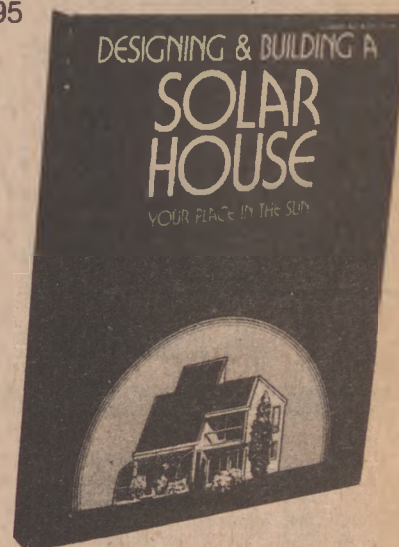
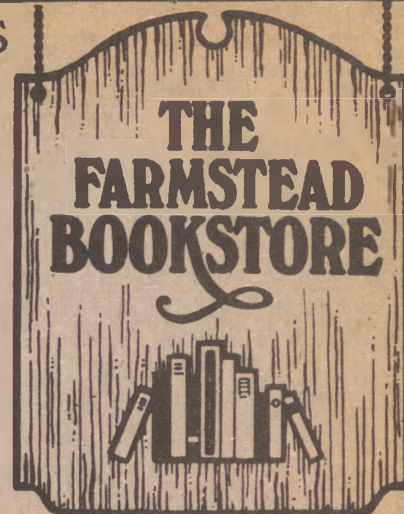
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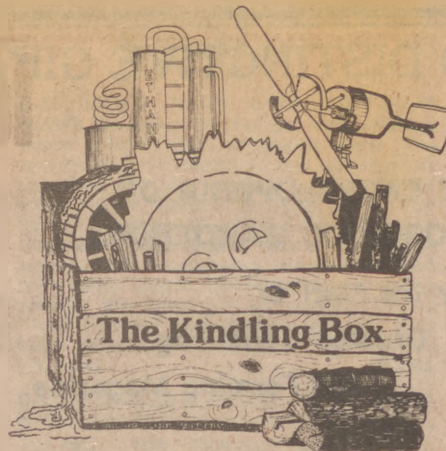
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solar in the military

The potential for military use of solar technologies including wind energy, is staggering. Construction work by this sector amounts to approximately \$3 billion per year. With full implementation of a solar program, solar technologies used for heating, cooling, lighting, electricity, industrial processing, and heating water for large and small buildings could save the United States more than 60,000 barrels of oil per day. In addition, such applications could offer tactical advantages through greater self-reliance at outlying naval bases, radar stations, and other isolated facilities around the world.

--In Review

woodburners in politics

Conservatives have their widely touted political-action committee. So do liberals, along with an almost uncountable number of other interest groups and industries. The committees funnel donations to finance campaigns of elected officials sympathetic to their causes.

Now even woodstoves have started to influence the election process. The

Wood Heating Alliance, an association serving the fireplace, woodstove, residential coal, and woodheating industry, has formed a political-action committee called WOODPAC. The committee got strong support from Vermont Congressman Jim Jeffords, who said the woodheating industry "can do two or three times as much in a few years as nuclear has done since the beginning." Jeffords said the woodheating cause "should be and must be supported from a national level." He added that he intends to fight for wood-energy tax credits.

The congressman said that government can also make sure that the wood is utilized properly in order "to make certain we have enough wood around in the years ahead to maintain the industry." --American Forests

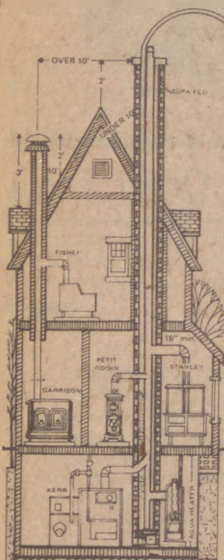
woodburning gift ideas

A national Gallup survey conducted in June/July 1979 indicated that approximately 18 million American households have at least one working woodburning fireplace—nearly six million own at least one working woodstove. The woodheating industry manufactures a wide variety of accessories that are both attractive and practical plus efficiency and safety oriented. A local woodheating shop can provide many gift-giving ideas from stocking stuffers to woodheating investments. The following are a few examples.

Heat Circulators increase the efficiency of factory-built fireplaces. The blower systems create a constant distribution of heat into the room. Some are designed to be installed in front of the firebox or behind the grate. Others also serve as grates as well.

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Fireplace Screens, a safety necessity, are available in free-standing styles as well as attached curtain models.

Give a cord of wood. It's not a glamorous gift, but it's guaranteed to be appreciated by a woodheating friend.

Hiring the services of a chimney sweep is not only unique but safety-minded. There are many other gifts to choose from andirons and popcorn poppers to log splitters.

woodburning safety during the holidays

Although woodburning safety is stressed year-round, the holidays demand special attention. To assure a safer and happier season, the Wood Heating Alliance recommends following safety tips.

*Keep combustibles away from the fireplace fire or a hot stove. Christmas packages, stockings, evergreen clippings and the Christmas tree are all highly combustible.

* Small children, who may normally show caution around fires or a hot stove, may be caught up in the excitement of the season. They may not be as careful. Extra attention should be paid to keep them a safe distance from the fireplace and stove area.

* Don't burn trash, wrapping paper, ribbons or even the Christmas tree or wreath in your stove or fireplace. It can create an overload of heat which could cause damaging chimney fires or even flames darting into the room. In addition, many colored papers such as magazine pages or gift wrapping, contain lead and can give off harmful gases.

* Never burn anything in a fireplace that utilizes gas or electric logs.

* Since the fireplace is a popular gathering area, it should be equipped with a spark arrester such as a mesh screen. Glass doors give the most protection.

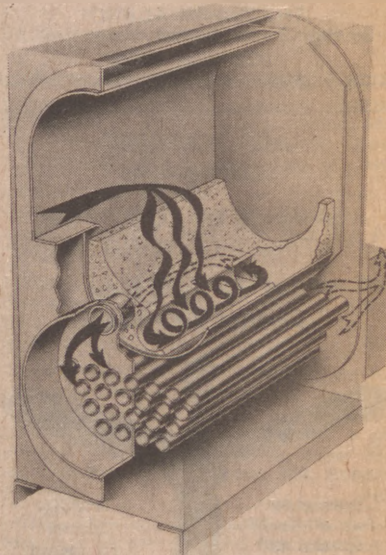
* Even though a fire in the fireplace has died down, the damper must be left open as long as embers continue to burn.

* Ashes should be disposed of safely in a metal box with a lid. □

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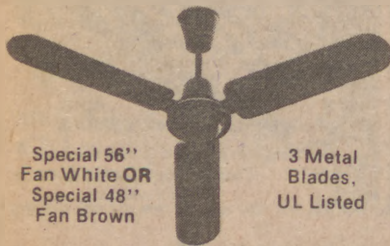
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TECHNICAL DATA

	Tirol 7N	Tirol 7ht	Tirol 7zh
width of stove, inches	35.4	35.4	35.4
depth of stove, inches	23.6	23.6	23.6
height of stove, inches	34.8	34.8	34.8
oven thermometer	yes	yes	yes
cooking surface, square inches	666.5	666.5	666.5
appr. output boiler w/coke II, btu	—	30.000	51.200
appr. output boiler w/wood, btu	—	31.740	56.300
radiated power wood:			
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